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ANTIPHTHISIN IN TUBERCULAR AFFECTIONS OF CHILDREN.

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The therapeutic application of antiphthisin has thus far been limited to comparatively few practitioners, partly on account of limited production, and partly because the remedy was only furnished to such as gave us assurance that they would restrict its application to cases which were not too far advanced in the disease, and in which we could still hope for its beneficial effects.

The reason for restriction is apparent by the well-known fact that specific medication can only be fully effective, when it is applied to pure uncomplicated cases, to the exclusion of those in which other pathologic processes are also present.

It would certainly be unreasonable to demand that this remedy which has a specific germicidal effect upon the tubercle bacillus only, shall also remove and cause the cure of pathologic changes, which result remotely from the primary cause and, more unreasonable still, that the remedy shall also favorably influence and cure complications, which like infection with other pathogenic germs have no relation to tuberculosis at all, more, than that they may be associated in the same patient.

In all such cases it is necessary to remove the complications by other treatment, either before or in conjunction with the application of the specific remedy; but the final results are determined by the importance and curability of such attending pathologic processes.

We see thus, that the use of a specific germicidal remedy can only be fully effective when the disease is still uncomplicated by secondary degenerations, and is free from complications which, unfortunately are present in most cases of tubercular disease as they come under our notice; there are, however, not a few cases of purely tubercular affections in an early stage in which the results of specific medication are highly satisfactory. In such cases I have every reason to believe, that under proper use of the germicidal products obtainable from the bacillus of tuberculosis, a cure will result almost without exception. For these as in all other therapeutic efforts the only unavoidable condition is that the organism itself shall still have the power to use and appropriate the introduced curative substance; for under no circumstances can we otherwise conceive the cure of disease, than that the living organism must, itself, take an active part in its removal.

Since the living organism can not by any means be compared with dead substances or matter which we can disinfect, regardless of the changes which occur within it, we have little to hope from chemic or physical means in the form of high temperatures, acids, alkalies, etc., and all hopes in this direction have thus far been changed to disappointment; their action having invariably been found a distinctly local one; beyond their direct application, they lose their intended effectiveness in the living organism by their undergoing insoluble or inert chemic combinations, by saturation or by diffusion.

With specific germicidal agents we have become acquainted only within more recent years, and, so far, they all are products of specific germs and not subject to changes such as we have learned do occur in the chemic and physical agents referred to; on the contrary, we observe them to reach the diseased structures directly and uninjured, and to become effective there.

This fact is not explained by assuming with Robert Koch, a peculiar affinity or attraction, the same as was taught by older schools of medicine to be the action of drug remedies, but by the imbibing and transportation of these curative substances through the agency of leucocytes.

For this, speak the penetration of leucocytes into the tubercular tissues and the production there of a substance which behaves peculiarly to certain anilin dyes, and the presence of which can only then be demonstrated when the specific curative substance has been introduced and has inaugurated the cure.[1] With this occurrence we see the tubercle bacilli diminish and disappear, while within the coagulated protoplasm of tubercular cells, the nuclei appear again in their normal coloring properties.

Upon the basis of such experimental observations, we can explain and understand why we are able to favorably influence specific pathologic changes within the living organisms with relatively small quantities of the specific remedy, and this I have shown to be the action of antiphthisin, while the crude tuberculin at the same time produces injurious effects, containing as it does, all the toxic substances produced by the tubercle bacilli in their cultures.

It was necessary to preface this paper by the foregoing remarks in order to show the importance of proper selection of cases, and to also indicate the limitations of the remedy.

Among the favorable uncomplicated tubercular processes are, in the first place,

THE TUBERCULAR AFFECTIONS OF CHILDHOOD.

That the heretofore available therapeutic agents are insufficient for the treatment of scrofulosis is easily demonstrated, and I need only to point to the unsatisfactory results in the tubercular affections of bones and joints of children.

[1] Klebs' Tuberculose, page 214.

The frequently observed cheesy myelitis of the long bones, although subjected to resection, is often followed by renewals of the process, which may finally compel ablation of the entire limb, and even with such radical operation, the life is not infrequently lost through extension of the disease to the pelvis, the spine or to internal organs.

These cases are peculiar in the often observed long duration of the tubercular disease, although extensive destructive processes and extensive involvement of the glandular structures are present, without seriously damaging the general condition of the patient, a fact which makes them especially adapted for the treatment with antiphthisin.

The danger of depending for the ultimate success upon the heretofore customary treatment is, however, shown, by the unexpected occurrence of inflammation and suppuration, by the advent of which the favorable time for specific medication has been lost, while the insufficiency of internal medication is also demonstrated; and we can not emphasize too much the fact, that scrofulous affections are primarily of a tubercular character, which so long as they remain purely tubercular, run their course without inflammatory complication.

It is entirely the same with all other scrofulous and tubercular affections which, so long as inflammation and suppuration have not occurred, are all amenable to the antiphthisin treatment.

What clinical results may be obtained will appear from a short resumé of cases treated by me, the number of which I regret is not as large as I could wish.

In giving my experience, I divide my cases into several natural groups, the first of which I may call

THE LATENT TUBERCULOSIS OF CHILDHOOD.

Of this group we find numerous examples in tubercular families. The, at birth, apparently healthy children, show sooner or later a retardation in growth and that pale appearance, with thick upper lips, which may remind us of myxedema, and which on the whole we call the scrofulous diathesis. In other cases the organism is simply retarded in its development, sometimes altogether, often only in length, the children remaining then short only; in other instances they grow rapidly in length, at the expense of corresponding breadth and fullness. In any case, the absence of glandular swelling may simulate nutritive disturbances due to other causes which the physician hopes to overcome by dietetic and roborant treatment, and although at times successful, failure to correct the evil is by no means an exception, and the truly present latent tuberculosis is attested by the common saying that "such children sooner or later become tuberculous."

Just upon this point I desire to distinguish between the more modern views based upon bacteriologic research and the older theories based upon empirical observations only.

We fortunately know now quite well, that tubercular infection does not necessarily cause stormy or violent symptoms, but that, on the contrary, it may remain latent for many years, and only show its presence by more or less nutritive disturbances which, instead of being predisposing conditions, are in fact the expression of the already present tubercular disease.

If any experienced observer would still doubt this, he can certainly recall cases from his practice, in which the history shows such nutritive disturbances having been present in childhood, and in which during youth or early manhood a more rapidly developing tuberculosis occurred. Neither will he have missed cases in which such latent tubercular affections have been approximately recovered from during childhood, and who, nevertheless subsequently, perhaps after considerable lapse of time, died of the disease. Such cures when obtained through dietetic and climatic influences are, as a rule, not lasting; they do not assure against a later development; indeed, they may carry with them even a certain degree of danger, and I have repeatedly seen cases of young strong subjects in which suddenly, in connection with unusual or violent exertion, the acutest forms of pulmonary tuberculosis occurred. In such cases we can then show anatomically a small, not previously diagnosed cavity from which dissemination of the tubercle bacilli took place as a consequence of such over-exertion.

The practical physician may reply, that we certainly can not look upon all badly developed or poorly nourished children as tubercular, and this is not the case, neither is it necessary to here consider the other causes for nutritive deficiency in childhood. But I consider it quite certain that by far the greatest number of such cases are subjects of latent tuberculosis, especially when no other good and sufficient cause is apparent. The question is, How are they to be diagnosed, when the physical examination of organs is negative?

The answer is very simple; and it is a matter of surprise that the method of which we avail ourselves for recognition of latent animal tuberculosis has not been taken advantage of for diagnostic purposes in the human subject also.

The greatest credit is due to certain American health authorities and statesmen to have first made practical use of a scientific fact in the systematic application of tuberculin for the recognition of latent tuberculosis in cattle, and history will recognize it equal in importance to the introduction of vaccination for smallpox.

One might well ask why this simple and sure procedure has not found recognition and practice for the diagnosis of latent tubercular affections in the human subject? Whatever the answer may be, whether due to the objection of patients and parents, or to want on the part of the physician of proper insistence for such test, or whether the neglect lies in the newness of the procedure, as contrary to existing modes and habits; the members of the medical profession can not ignore and escape this issue, for the truth of its value is beyond doubt, and the test must be insisted upon in all cases where the diagnosis can not otherwise be sufficiently established.

Among my cases of latent tuberculosis, I will call your attention to but few.

Case 1.—G. B., a delicate girl aged 6 years, has been the subject of cough without any physical evidence on the part of the lungs; she was highly anemic, with deficient development of the osseous and muscular system; there was also slight swelling and tenderness of the cervical glands; râles could be shown in both apices; after the use of 20 cubic centimeters of antiphthisin, the child not only lost her cough entirely with disappearance of the râles, but she improved remarkably in general health and appearance, and has since remained entirely well.

Case 2.—N. B., child 10 years old, tall and slender; the father died of tuberculosis. There were only slight differences in the percussion note. Very careful percussion

showed, however, slight dullness in left apex posterior, on the right side posterior a little more marked relative dullness extended to the spine of the scapula. In this locality inspiratory ronchi were also present and extended further downward; in several places, there was also blowing expiration, especially over right apex.

After the use of 50 cubic centimeters of antiphthisin in thirty-two days, when she was discharged, the child gained two and one-half pounds; coughed only occasionally; no more dullness could be demonstrated, and since then has been entirely well.

Case 3.—O. St., boy 13 years old,[2] suffered from asthmatic attacks for the last year; is imperfectly developed for his age; lips and nose thickened; has been mentally retarded also. Hydrotherapy, climatic influence and local treatment of the nose have been of no benefit. Weight 107 pounds, low temperatures, between 36.5 and 36.7 C.; frequent coughing paroxysms, especially nights, and with considerable dyspnea. Physical examination showed moderate dullness over left lung, posterior to middle of scapula, and supraclavicular in front; also a small area of dullness at lower angle of right scapula; auscultation over left apex front and back gave blowing expiration and harsh inspiration, with here and there accompanying ronchi, also roughened respiration over the dull area at lower angle of right scapula. At times expectoration, but none obtainable for examination, the expectoration disappearing entirely in the early part of the treatment. After six weeks his weight had increased seven pounds, there was no cough, no asthma, and his general health was so completely restored, and his appearance so improved, that his mother upon her arrival could hardly recognize him to be the same child. Physical examination showed nothing abnormal in his respiration; slight difference on percussion was still present.

Under the influence of specific medication the tubercular intoxication apparently ceased, and the deficient nutrition gave place rapidly to normal conditions. This case is the more interesting since long-continued climatic and hydropathic influences, as also the local treatment of the nose, were entirely without benefit.

Since percussion differences were still existing, I did not consider this case as radically cured, but it is fair to presume, from the result obtained, that by timely repetition of the treatment further tubercular development can be prevented.

In a second group of cases, I include:

PURE NON-COMPLICATED SCROFULOUS AFFECTIONS.

Since the term, scrofulosis, is established, I think best to retain it, but I understand it to mean the specific pathologic processes occurring in childhood, produced by the bacillus of tuberculosis. The form and composition of the cheesy deposits in scrofulosis is equally characteristic with those which we find in the so-called "pearl disease" of cattle, and which are at times more or less calcareous, pediculated, or rich in granulation tissue resembling sarcoma.

The scarcity of tubercle bacilli is usually common to both, which made the recognition of their etiologic identity exceedingly difficult. Both are auspicious examples of the variation of pathologic processes produced by the same cause but upon a different soil.

The scrofulous deposits, which I consider as the essentials of the process, are the product of the reaction, to the tubercle bacilli, on the part of the youthful organism, and may therefore be looked upon as a defense against the dissemination of the infecting germs. If the defense is broken through, we see tubercular dissemination occur from the bronchial glands into the lungs or into the blood, from the cheesy nodules or deposits of nerve centers into the meninges, etc., showing that the tubercle bacilli must have been present from the beginning in these deposits. How should they have found their way later into these non-vascular masses? for, indeed, we can no longer accept the theory of spontaneous generation.

[2] Klebs' Tuberculose, page 332.

If further proof is, however, needed, we can also furnish it therapeutically, for if by any manner of procedure we succeed in destroying the tubercle bacilli, the cheesy deposits disappear. According to the sentence: "*Sublata causa, tollitur effectus*," must we conclude with mathematical certainty, that the tubercle bacilli are the cause of scrofulous new formations.

Not infrequently we witness such a result through the inherent forces of the organism, when they are furthered upon Hippocratical principles, but in many cases such a natural recovery is impossible or only obtainable after irremovable and serious injury has occurred, of which the following case is a striking example:

Case 4.—S. B., girl aged 16,[3] was referred to me in Karlsruhe on account of a scrofulous eye affection. Her development was retarded, corresponding to the age of 10 or 12 years; the insufficient development was the more striking on account of a coexisting hunchback, but her mental and sexual development was also retarded. Menstruation had not yet occurred. The eye affection which had long been unsuccessfully cared for by Dr. Mayer, an experienced ophthalmologist, and in a good hospital, consisted in cloudiness of the left cornea. The limbus was covered by a gelatinous swelling; the upper and lower portions of the cornea were infiltrated with dry, yellow masses; and in the center, fibroid degeneration in the form of a leucoma had occurred. The entire conjunctiva was much swollen and reddened, traversed by dilated vessels; three large arteries approached the cornea; near the middle vessel upon the sclerotic was a yellow, round, flat nodule 3 to 4 mm. in diameter, immovable and covered by the movable conjunctiva; a smaller arterial branch terminated at its edge. Beyond the hunchback there was nothing indicative of scrofulosis, elsewhere; especially no enlarged glands. She weighed only fifty-eight and three-fourth pounds and despite the good diet of the hospital, she was thirty pounds short of her normal weight, according to Quetelete's tables.

Specific treatment was applied from October 15 to November 22, beginning with 5 milligrams, and increasing to 1 cubic centimeter; in all 13.7 cubic centimeters. Its effect upon the eye was early observable. The gelatinous swelling disappeared first under contraction of the vessels, then the yellow infiltration upon the upper segment of the cornea began to clear, became smaller and was gone on the twenty-fourth day. The lower yellow spot also had by this time become much smaller, the dilatation of the vessels had disappeared. There was no more lacrymation or pain. On the thirty-first day the episcleral spot had also entirely disappeared.

Her general condition, in the meanwhile, gave place to a striking change for the better; menstruation had occurred; her appearance was much better; she had gained four pounds in weight.

A slight relapse occurred upon the eye the following month, but was quickly controlled by a few more injections. The central fibroid degeneration was so far improved that the patient could count fingers at 5 meters, which she could not do before, at half the distance. The patient was then discharged, but suffered subsequently from two more tuberculous deposits. On March 20, she returned with a diffuse swelling on the lower border of the left lower maxilla, which was incised, but discharged only a small quantity of thin pus; after eighteen injections, some of which were finally made into the swelling, the latter disappeared entirely. A similar swelling occurred at the head of the left fibula, disappearing after three local injections. Finally, on May following, a bush-like dilation of a conjunctival vessel near the lower border, with a small gelatinous infiltration of the edge of the cornea developed, which disappeared after one injection which was made into the subconjunctival tissue. Since that time the girl has remained well.

I have related this case more in detail, because it is rarely that we can observe upon the human subject in so satisfactory a manner, that which I had repeatedly observed to be the action of tuberculin and of antiphthisin in the animal experiment, namely, the entire disappearance of tubercular tissue or deposits without reaction.

[3] Klebs' Tuberculose, page 328.

In this case it could not be shown, as I have done in the animal experiment, that the conversion and re-absorption of tubercular tissue is preceded by the degeneration and disappearance of the tubercle bacilli, but there is no good reason to doubt that in both instances the same course obtains, and that, under the use of the remedy the tubercle bacilli are directly injured and their virulence destroyed entirely so, as one can demonstrate it to occur in the test tube.

The following experiments made by me and published in my work on "Tuberculosis,"[4] may be of interest in this connection. Of five guinea pigs born on the same day, two were infected on July 1, 1892, with tubercle bacilli which had been kept five days in a solution of the remedy, while the other three were infected with bacilli from the same culture, but without exposing them to the effect of the remedy; on the eighth day, the three last animals showed a marked difference in their growth, having only gained 11, 50, and 59 grams respectively, whereas those which were infected with bacilli treated with the remedy, had gained 105, and 110 grams. The three sick animals were killed, two on July 30 and one on August 24, and were far advanced in tuberculosis; whereas, in one of the other two, killed August 4, no tubercular lesion was found. The second animal was killed a year later. It had reached its full growth, weighing 681 grams, and showed only the local changes in the abdominal cavity which Prudden and Hodenpyl have shown to be characteristic after the injection of dead tubercle bacilli.

Case 5.—H. B., age 9 years, (the sister of Case 4) was referred to me by Dr. Ruppert, of the Vicentius Hospital. The pale, poorly nourished child had been treated for some time without result for an affection of the knee joint. Could walk only with crutches; the left knee presented a spindle-form swelling (tumor albus) involving the external soft parts, while the interior of the joint was filled with soft fungoid masses.

The injections were made in part, peri- and in part intra-articular; altogether in the first month 6.72 cubic centimeters were used in twenty-two injections. No increase occurred in the inflammatory processes; on the contrary after the fourth injection, the pain was materially diminished; during the second half of the month the child could walk without crutches, and on the twenty-fourth day the swelling had entirely disappeared, nothing of the fungoid masses could be longer detected, and after the faulty position of the limb had been corrected by the application of an isinglass bandage, the child was discharged. Three months later the child presented herself to me, having the appearance of perfect health. Inasmuch, however, as no other evidence of tuberculosis was present, it might be urged that the affection may not have been of a tubercular character, but I believe that the history of the sister's case, and the result of the treatment would refute such an objection.

The third class of cases are those in which both, the

INVOLVEMENT OF THE LYMPHATIC GLANDS AND OF THE BONES,

bear unmistakable evidence of scrofulosis, cases which, however, differ from the others only quantitatively, as to the extent of the disease. These are cases which at the present time are exclusively referred to the surgeon, inasmuch as every other method of treatment is unavailing. But even for the surgeon, such patients are not the most desirable, because of the extensive tubercular processes and the obstinate relapses which are observed.

I am of opinion that when in such cases multiple deposits exist in the osseous structures, even the operative treatment becomes of doubtful utility because beside the observable and removable deposits, smaller and not observable ones are frequently present, which, although still latent at operation, are apt to develop rapidly thereafter, and in any operative interference the danger of dissemination is ever present.

The following three cases were treated in the Diakonissen Hospital and referred by its surgeon, Dr. Baer. In only one case was the result entirely satisfactory; of the other two, one indeed improved, but a permanent result was not obtained, for reasons which will become apparent.

Case 6.—S. D., aged 3½ years, a well nourished girl. Resection had been made of right elbow joint, on account of fungoid caries. The child presented numerous scrofulous ulcers communicating partly with the bone, partly with lymphatic glands, many of them fistulous, especially upon the right arm and neck. Patient received forty injections between November 1 and Dec. 17, 1892, in all 7 cubic centimeters. A small abscess was incised on the right wrist joint, and was treated locally with the remedy. Discharged December 17, when all wounds, ulcers and fistulæ were entirely closed, and all glandular swellings had disappeared. A year thereafter the child had remained free from relapse and was entirely well.

Case 7.—Isabella T., 5½ years of age, fairly well nourished, but pale; suffered from an enormous number of scrofulous ulcers upon the face, neck and extremities which communicated mostly with glands, but also with bony parts. The right metatarsal bones upon which several operative procedures had failed, presented a cheesy mass, while the leg of the same side presented long cicatrices, but also ulcerations and swellings in connection with the bones and glands. Under the specific injections most of the ulcerations healed, but new swellings occurred constantly, and the condition of the metatarsal bones in spite of again repeated partial resection could not be brought to a cure. In the course of the treatment the child had the measles, which certainly was not favorable to her recovery. In spite of large doses increased to 1 gram per day, and of long-continued treatment, the result was only partial. Since, with a slight exception, no septic complications were present at any time, the failure can not be attributed to sepsis, but must be looked for in the extensive distribution of tuberculosis and in the deficient blood conditions. I therefore advised the employment of salt water baths, and climatic influences for her general improvement. I have not been able to learn the further result. Another hindrance in the treatment was the great number of subcutaneous injections, altogether 130 in number, which became very painful. Unfortunately, I had at that time not yet learned that the rectal injection of the remedy is equally efficacious, which method of administration I now recommend, especially in practice with children.

The last, *Case 8*, of the scrofulous diseases in childhood which came under my care was a boy aged 10, with suppurating tubercular coxitis. In this case a short course of injections was without any benefit, and the failure emphasizes the fact that under complicating suppuration and sepsis, the latter must be removed before resorting to specific treatment.

While the material which I submit to you is not very large, I nevertheless believe it sufficient to show that particularly in the tubercular affections of childhood, antiphthisin offers most favorable prospects; the selection of cases is of the greatest importance, and we can only then expect its fullest benefit when we select cases which present neither septic complications nor conditions of exhaustion and marasmus; and you will doubtless also appreciate that there are cases, which on account of the great extent of the purely tubercular disease may fail to make a recovery.

These limitations, however, suggest that we should employ the remedy in the early periods of the disease, and that we should not lose valuable time in the employment of symptomatic treatment only.

Finally, I wish to point out that, in all tubercular affections, the same as in many other severe and

[4] Klebs' Tuberculosis.

serious diseases, their treatment in hospitals or special institutions offers great advantages over that of private practice.

In Europe numerous institutions for the treatment of children have been established, and should the profession in this country desire it, the Winyah Sanitarium, at Asheville, N. C., will be glad to establish a special institution for tubercular children upon the most approved and advanced principles, and with every essential for their care.

The excellent climatic conditions of its location would permit their treatment in the open air at all times of the year.

DISCUSSION.

DR. LARRABEE—No one is warranted in making a diagnosis of tubercular meningitis who has not sat at least an hour at the bedside of the child. No practitioner who has sat at the bedside of a child an hour will fail to make a proper diagnosis of tubercular meningitis. If the three symptoms are there together, it is tubercular meningitis; therefore the importance of emphasizing all these symptoms. In the first place there must be some evident deterioration, some disturbance of the mental and physical condition. There must be at the same time the knitting of the eyebrow, or the convulsed lid. There must be the contracted abdomen, and there must be constipation. These three symptoms, and the valuable symptom of projectile vomiting, make a case of tubercular meningitis. The projectile vomiting is valuable in showing the disturbance from the center to the periphery. But that alone must not diagnose the case. There must be the peculiar knitting of the eyebrows, and the constipated bowel and the dilated bowel. If the four run together, you are absolutely certain, although the three symptoms are sufficient for the diagnosis ordinarily. Whoever takes the history of the family, and relies on the statement of the friends in this examination, will often find himself mistaken. Large hospital experience from day to day teaches the truth of the words of the lamented great surgeon, who was crowned both in Europe and America with laurels. When closing his life he said: "Two-thirds of the civilized world have syphilis, either hereditary or acquired."

Whenever I give iodid of potash to a child and cure his bronchitis, I consider it a very fortunate result. I might say I have touched in the dark the diathesis. I say also that when I give these cases of brain trouble iodid of potash, and they get well, I put it down in my category that I have struck a trail, and that I have stumbled upon a recovery in a case where I could not by any questioning or examination find a specific cause. The well-known fatality of these cases, the necessarily fatal results of tubercular meningitis, forbid that we should record cases of recovery, and the Doctor is evidently very correct in that.

As to the difficulty in the diagnosis of pneumonia, I suppose it is unnecessary to repeat all the difficulties of that diagnosis. There is only one way to get out of it, and that is in every case to make an examination of the chest. Make it a routine every time.

We have before us to-day one of the most distinguished gentlemen in either Europe or America, Professor Klebs. (Applause). It is a great misfortune that the investigations and researches of Professor Koch were published when they were. It was premature, and he objected to it, and he was made to say that which he never thought of saying. I was in Berlin at the time and was conversant with the ideas then prevailing, but the London papers got hold of the thing and published it as a cure of consumption which nobody had thought of. That publication produced a feeling that has thrown discredit upon all efforts in the direction of Professor Koch's researches.

The study of tuberculosis in childhood is an especially interesting one, for the reason that it is only in childhood that we have so many diverse manifestations and the only reason of that is because we have so many growing centers. Tuberculosis, like everything else of a morbid character, attacks that part at which the greatest activity is manifested. In the adult we expect to find tuberculosis in the lung, while in a child we may not find it in the lung, but find it everywhere. Where there is the greatest activity and growth, that part invites the tubercular bacillus. My friend Dr. Von Ruck, has admitted the term tuberculosis, but I am sorry he has tied a string to it. It is said that scrofulosis is associated with or is part of the tuberculosis in infant childhood. We do not believe in the transmission of the tubercular bacillus. If a babe be born with tubercular bacillus, it is not going to live long enough to trouble anybody. I recognize in scrofula a disease depending upon a debility, born of debility and born of hygienic surroundings, and attended by increase in fibrous tissue. We have in the scrofulous subject a tendency to the increase of fatty tissue, the thickening of the lips and nose. When the child arrives at the age of 20 or 21, we never hear of scrofula, unless it is engrafted upon the system.

DR. LYON, of Connecticut—I would like to ask Professor Klebs, through Dr. Von Ruck, what distinction he makes in his use of tuberculin and antitoxin—what difference he makes in the use of the two? In the second place, if he would use them both as diagnostic or both as curative, and whether he so instructs the medical profession. I ask these questions to call out answers from him.

DR. UPSON—I ask Professor Klebs whether antiphthisin is effective when given by the mouth?

DR. PARSONS—In my paper, I did not mean to depreciate in any sense the importance which attaches itself to this tubercular bacillus. My point was illustrated better than I could do it by the remarks of Professor Larrabee, regarding scrofulosis.

DR. GRIFFITH—I want to say one thing in support of the idea that this may have been a case of tubercular meningitis which recovered. I think we find it more manifest daily that there is a vast amount of dogmatism in medicine. I think it possible that perhaps tubercular meningitis may recover. There was a case reported not long ago of a child who did recover, and it was proved before recovery that it was tubercular meningitis, by obtaining fluid from the spinal column in which the bacilli were discovered, and yet the child recovered. What is proved to have happened once, may happen many times, and we are not in a position to say that every case is tubercular meningitis that dies, and every case that gets well is not tubercular meningitis. We can not state that.

In regard to the diagnosis of pneumonia, I think Dr. Larrabee misunderstood me, if he understood me to say that we must not examine the lungs very carefully. I say not only that, but that in spite of the examination of the lungs we fail many time in making a true diagnosis. The pain in the abdomen is not a symptom in itself of anything important, but when combined with other things is a very important matter.

PROFESSOR KLEBS spoke in German.—At the conclusion of his remarks, several gentlemen in the Section requested the Chairman to ask Dr. Von Ruck if he would translate into English the substance of Professor Klebs' statements, that those not understanding German might have the benefit of his discourse.

DR. VON RUCK made the following statement: there is practically no difference between tuberculosis and scrofulosis. Scrofulosis represents a tubercular infection in a state of latency at times, but becomes more manifest when glandular, and other manifestations, such as retarded growth and development show themselves. The clinician only sees the manifestation in the form of nutritive disturbance, and the tubercular tissue is hidden from his observation. This nutritive disturbance, as for instance the thickened upper lip and nose, and the otherwise arrested development of the child, are produced by intoxications with substances representing the products of the tubercular bacilli at the point of their localization. If any proof is necessary that these scrofulosis manifestations are of a tubercular character, it is apparent from the distinctly tubercular manifestations which result when the cheesy glands break down and when their products are absorbed into the circulation, either through the lymphatics, or when the tubercular process has perforated a vein, in which case miliary tuberculosis or localization of new tubercular eruptions in distant organs become manifest.

If scrofulosis were not primarily tuberculosis, how could we explain the appearance of such distinctly tubercular manifestations following immediately upon the softening and breaking down of the specific scrofulosis new formations? These scrofulous deposits must contain the tubercular bacillus, for it is only through their absorption that the more acutely tubercular infection becomes manifest, and it could not be conceived that in these non-bacillar deposits the tubercular bacillus should have found entrance after their generation, unless we would again return to the theory of

spontaneous generation. These are all facts that have been demonstrated anatomically and pathologically over and over again, and stronger proof than has been adduced in that direction, it would be impossible to furnish. But whatever the practitioner wishes to maintain, I can only recommend to you that he subject those cases of latent or more manifest scrofulosis affections to the test of specific medication, which I can assure you is perfectly safe and harmless, and under which, if the process is a truly tubercular one, these manifestations will quickly disappear, furnishing such results of still further evidence of the truly tubercular character of scrofulosis.

As to the diagnostic value of tuberculin, the same has never failed us in the experiments with the lower animals, and will be found equally satisfactory in its application to the human being. I must, however, warn against the employment of tuberculin as a diagnosticant in cases where extensive tuberculosis is already present, and in which from the clinical history and course of the disease there should be no reasonable doubt as to the nature of the malady. On the contrary, I would advise the use of such a test only when a disease is entirely latent and only manifest by the nutritive disturbance heretofore mentioned, in which case the test is made rather for exclusion of the tuberculosis than for the confirmation of its presence. If any of the gentlemen who desire to do so, use tuberculin in the adult, I would advise the hypodermic injection of 5 milligrams, say about 9 o'clock in the morning, after having previously made a co nplete record of temperature preceding the test for one or two days. If, now, a distinct rise of temperature occurs, say within about twenty-four hours, then the evidence is conclusive that the tubercular process is present in the individual. The test failing, the experiment should be repeated in the course of three or four days. This time, however, with a larger dose of 10 milligrams, with the same observation of temperature before and after its application. No temperature reaction occurring to those doses, we can safely conclude that in the individual experimented upon, no active tubercular tissue is present.

In children, the first dose for trial could be much less, and the temperature reaction would probably take place from the administration of from .5 to 1 milligram. A second dose can be made with 2.5 or 3 milligrams, and a final one with 5 milligrams, with the same precautions as spoken of for the adult.

For some time past, however, I have not applied tuberculin for diagnostic purposes in the human subject, but have used the toxalbumins precipitate in the manufacture of antiphthisin. A definite amount of the organic substance being present, we can apply this substance with much greater precision, inasmuch as tuberculin varies considerably in the amount of organic substance contained in different specimens.

The process of manufacture of antitoxin is as follows: we take the ripe culture of the tubercular bacillus and reduce it to one-tenth of the original amount by evaporation in a vacuum. This really is the tuberculin as prepared by Professor Koch. With this substance we now apply an acid solution of soda iodid of bismuth, and obtain a precipitate which is filtered out. This precipitate represents the toxic properties of tuberculin as proved by me both in the animal experiment and in its application to the human being for diagnostic purposes. It produces the characteristic general reactions manifest in chill, malaise, aching, depression with rise of temperature and subsequent defervescence, just as we see in the beginning of all infectious diseases. It also exerts slight curative properties in the lower animals, but larger doses prove fatal, and entirely so, as does tuberculin. Taking now the filtrate. After the toxic albumins are filtered out, we can precipitate further by the addition of absolute alcohol and an organic substance resembling in its chemic reaction a peptone, and this organic substance redissolved in distilled water, so that the organic substance present is antitoxin.

In the animal experiment we find that this alcoholic precipitate does not produce fever or toxic symptoms of any kind. This is so in the human subject as well, but the animal infected with tuberculosis can be cured therewith just the same as we can do with tuberculin, and that in the human subject the tubercular tissue is re-absorbed without the production of any concomitant symptoms of an undesirable character.

DR. LARRABEE—How about tubercular meningitis after a supposed diagnosis of the case?

DR. VON RUCK—I have not treated any cases myself of tubercular meningitis.

SCORBUTUS IN INFANCY.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY I. N. LOVE, M.D.

VICE-PRESIDENT, AMERICAN MEDICAL ASSOCIATION, 1894.

ST. LOUIS, MO.

Prior to 1891, when the report of eleven cases of scorbutus in infancy was made by Dr. Northrup to the American Pediatric Society, I had never observed a case; at least I had never recognized it. Going back over an experience of sixteen years, the first five of which were spent in the eleemosynary institutions of St. Louis, including one year's service at the General Dispensary under the control of the Health Department, which was the receiving station for the distribution of all patients to the various hospitals of the city and where a very large number of outdoor patients were constantly treated, ranging from one hundred to one hundred and fifty cases a day (the medical colleges of St. Louis not having at that time established their private clinics), a number of cases come to mind with their various symptoms suggesting scorbutus, but such cases were invariably found in family practice rather than in public institutions. There can be no question as to the importance of the disease.

Since the appearance of Northrup's paper in 1891, five cases have come under observation, and they uniformly occurred in the families of the well-to-do. One case had been fed for ten months with sterilized milk too largely diluted with barley-water, and investigation elicited the fact that equal parts of sterilized milk and a strong solution of barley-water had been the food given.

Another case, one of a pair of twins, eight months old, who had been fed with boiled cow's milk largely diluted with plain water and lime-water. Both were almost typical specimens of marasmus. There had been a very evident failure of assimilation from the beginning, and marked gastro-intestinal irritation. The parents and the attendants had been deceived by the fact that the children being very small at birth and delicate were disposed to sleep almost constantly, and this, they thought, gave evidence of their being satisfied and getting a sufficient amount of food. Insufficient food and the consequent hunger usually results in a considerable amount of fretting and crying. My being summoned was dependent upon the fact that a few days before, one of the children who had been so uniformly amiable and sleepy, had suddenly developed marked disposition to fret and gave evidence of the presence of pain when handled. I observed, upon examination, a swelling around the right femur in its lower third, with great tenderness, the child crying lustily when the part was handled. Examination of the mouth revealed the fact that the gums were spongy and bled readily. No teeth had as yet appeared. The swelling of the thigh increased and by the second day purpuric spots appeared at various points upon the surface of the child. It died of exhaustion within three days from the time of my first visit. An interesting feature in this case was, that of two children surrounded by exactly the same conditions, one should develop scurvy and the other should not, both, of course, preceded by a history of marasmus. The surviving child was given liberally of beef juice, orange juice, and fresh cow's milk, given, when possible, directly from the cow. It was surprising to see how rapidly the child

began to thrive, and it soon became well nourished.

A case came under observation, nine months old, which had been treated from birth; it had been poorly nourished and it was found to have a few spots of pemphigus blebs about the nates shortly after birth. A diagnosis of congenital syphilis was made and the child treated accordingly. The mother was delicate and very evidently her milk had been poor in quality and quantity. The child did not thrive and though further local expressions of syphilis did not appear, it was supposed to be a case of syphilitic marasmus. Acute symptoms of great distress and swelling of both thighs developed; on being called into the case, after careful examination, finding puffy bleeding gums and pronounced extravasation of blood in tissues about both femurs, I made a diagnosis of scorbutus. This child had been nursed by its mother, who had been kept constantly under mercury almost to the point of salivation. The child had also been given mercurials most of the time during its life, and this together with evident insufficiency of food as regards quantity and quality, evidenced that the condition of the child was due to mercury more than syphilis; indeed, I was of opinion that it did not have syphilis at all. I stopped all mercurials and administered raw beef juice to the child and occasionally a teaspoonful of orange juice with water. Analysis having demonstrated that the mother's milk was in every way deficient and the general condition of the mother being very unfavorable, I at once ordered the child to be weaned and carefully substituted good fresh cow's milk, diluted with a small quantity of water, and added thereto a teaspoonful of Mellin's Food.

By careful, systematic feeding, watching the secretions, the child began to improve within a few days and ere many months had passed was finely developed.

It is well to emphasize the thought that this disease is most frequently mistaken for rheumatism, stomatitis, rickets, sarcoma arthritis and infantile paralysis. As in the majority of diseases which confront us, the important thing is the making of the diagnosis promptly and the removal of the cause, the latter being uniformly dietetic. We can not too thoroughly emphasize the thought that scurvy in infants, as well as in adults, is uniformly produced by the lack of certain nutritive elements, certain organic acids, such as citric, tartaric acid, and in combination with potash. These special elements are known to be contained abundantly in fresh vegetables and fruit juices, in raw meat and raw milk, and the evidence is certainly accumulating from many directions and my own experience corroborates it, that the modern craze for the sterilization, the complete desiccation of milk tends toward scurvy. Of course, it goes without saying, that unsanitary conditions, the lack of sunshine and fresh air increase the tendency to this disease.

The reading of the existing literature upon the subject and the careful weighing of the evidence furnished by my own experience and observation, justify the following conclusions:

1. That we must impress upon the mothers of the children under our care that, in artificial feeding, something additional is needed beside a food that will stay with the child or apparently agree with it; in other words, that an absence of marked evidence of indigestion does not necessarily mean assimilation.

2. More stress on the part of the family physician should be laid upon the tissue-building powers of the food presented. The primitive mothers who permitted their children early to have some of the food from the table in small quantities were not far wrong, for there can be no doubt that the general nutrition of the child was more completely subserved.

In artificial feeding we have a divided duty; regard for the stomach and a general disturbed alimentary canal will often necessitate the temporary use of a food which should not long be continued. Many of the commercial foods often meet a temporary emergency and are valuable to that extent. Certain it is that the modifying material which can be combined with fresh cow's milk in such a manner as to facilitate digestion by the breaking up of the curd, which is the disturbing element in cow's milk, and at the same time furnish additional elements of nutrition and not interfere with or destroy the elements presented in the milk, which are anti-scorbutic, is a desideratum, and such we have in Mellin's Food.

My experience agrees with that of Dr. Davis at the Philadelphia Hospital reported in the *American Journal of Medical Sciences*, June, 1891, to the effect that, although sterilized milk often cured and prevented gastro-enteric disturbance, the nourishment of the child is insufficient and unless guarded they will pass into a condition of marasmus. For the meeting of emergencies, the correction of a gastro-intestinal disturbance, for temporary use in such cases, they are very valuable.

Certainly the evidence is overwhelming that children brought up on dried foods without any modification of conditions, soon become pale, flabby and deficient in vitality and even present symptoms of rickets. There can be no doubt that the fresh secretion from the mammary glands of the cow, ass or goat, the same as with the human mother, furnish the fresh animal element necessary to proper nutrition.

The earliest records of infantile scorbutus appeared in Germany from 1859 to 1873, made by Moller, Bohn, Hirschsprung, Senator and Ingilve, the first appearing in England being made by Mr. T. Smith in 1876, but not recognized as scorbutic. Borrough and Cheadle, of England, were the first liberal contributors to the subject. Up to a recent date there was no record of infantile scurvy having been met with in America. Since the first able presentment of the subject by Northrup in 1891 there have been a number of contributions upon the subject, notably those of Crandall, Fruitnight, Winters, Booker, Jacobi, Holt, Carr, Louis Starr, Rotch, Henry Ling Taylor, and more recently Egan, Blackader, and Hollopeter, so that the evidence is accumulating that infantile scurvy is a definite entity and general practitioners should be on the alert for it. Indeed, we may safely say that the literature regarding this subject is one of the most important and valuable contributions to the fund of general medicine made by pediatric workers.

DISCUSSION.

DR. ATKINSON, of Baltimore—I am very far from denying the occurrence of scurvy in infants. It is, however, a condition that must be extremely rare. Upon the subject of artificial food for children, there are many conditions lacking in artificially prepared food. Nobody doubts that. The lack of proper nutrition is more accountable for ill effects than the insufficiency of the properties in the food. Condensed

milk, properly condensed, is just as perfect food as cow's milk not condensed. Not so good as mother's milk, but condensed milk with 75 per cent. of its water drawn off by evaporation is just as good as simple cow's milk. It keeps longer. Condensed milk is simply preserved milk. Condensed milk is as much of a preserve as a can of preserved strawberries. Each pound of condensed milk contains a quarter of a pound of cane sugar. But this is a question, however, that has led me away from the one at issue, which is scurvy in infants. We have hemorrhagica occurring in active children as in adults; it might be mistaken for scurvy, and if it lasts long enough will run into conditions that make it hard to distinguish from scurvy—conditions that assimulate scurvy very closely. I do not think the cause of which the Doctor speaks was the saving condition, but I think it was the correction of the error in the nourishment of the child that brought about the improvement. As I said before, I do not state that there is no such thing as scurvy in children, but do say that if there is scurvy as a condition in nursing children, it is a thing of rare occurrence. That it may occur, I do not deny, but in nearly every case where there are conditions that assimulate scurvy, it is simply assimulating scurvy and nothing more. It is marasmus, or purpura hemorrhagica and allied conditions that bring the vitality of the child to a low ebb.

DR. BISHOP, of Maryland—There is a percentage of children who die who can undoubtedly have their lives spared by the proper treatment of the mother. The proper condition of the mother will result in a live child, and a child whose health may be prolonged for a greater or less length of time. It seems to me that one question hinges on the other in these various papers. The question of heredity is one of the things involved. A child who has a hereditary fault in its physical condition requires different care from that of a perfectly healthy child. I think there is a mistake made by some of you gentlemen who have the care of infants in large cities. I listened with a great deal of interest to the care of children as described by Dr. Cotton. But I think instead of their taking such care of these weak children, it would be a much more humane thing to let them die. There are quite a large number of children who go to hospitals, as well as in private practice, who ought to be allowed to die. It is not a humane thing to let a child that is a victim of the disease of its parent, live as a child and die as an adult. Such a child ought to be eliminated from society, because of the evil effect it produces in after life. People who have such constitutions are more apt to reproduce in a hurry than those who have perfect physical systems. Persons who are predisposed to consumption are much more likely to marry, and, being married, much more likely to have children, than persons of perfect physical formation and conditions. I have noticed it as well in the vegetable kingdom. The diseased peach tree will produce twice the fruit—certain classes of diseased trees—that a healthy tree will produce. It seems to me there ought to be a certain amount of care taken not to permit these diseased children to grow up. Let their parents nurse them. There is another thing that we are in fault in, so far as regards feeding the child on artificial food. Instead of taking good care of the cow that it may produce good artificial food for the child, it would be better to take good care of the mother that she may produce good natural food for the child. These artificially prepared foods are good as a rule, but occasionally children are killed by them.

DR. LOVE—The prenatal feeding of the child is an important thing. Indeed, I think the physician should keep in mind the wellbeing of the child prior to its conception even. The proper and healthful condition of the mother, and all that concerns the child should be considered. That opens up a broad field. The question of matrimony, the question of who should marry and who should not, enter into it. No one knows better than a doctor that the main questions in the matter of matrimony are recklessly disregarded. I see my friend Dr. Hutchinson, of Des Moines, Iowa. He has been a very able writer on this subject of whether marriage is a failure, and all that goes with that particular problem, and I should be glad if the subject could be opened up along those lines.

The statement of the last speaker, suggesting that there are some children that ought to be permitted to die, is certainly one that we can not entertain at all. Where is there a mother on earth who would consent that her particular infant should be permitted to die? Where is the father, worthy of the name of father, who would consent that his child should be permitted to die? and another thing the physician has no right to entertain, is the matter of life and death. The desire to save, has developed new means of salvation. Not a baby that can be conceived is so insignificant as not to be worthy of our most profound consideration. We may have there the germ of a Garfield or Lincoln or Marion Sims, or Shakespeare, and so on. The proposition laid down by our friend can not be entertained at all.

The point thrown out by Dr. Atkinson, suggesting that he feels that most of these cases come under the head of bad nutrition, etc., is important; but when there is presented to us a baby with such profound symptoms, a baby who has been poorly nourished, and there should suddenly appear great distress, a suggestion of rheumatism of the leg, and marked evidence of extravasation of blood, and there is no question about the pathologic condition, and examination reveals the gums bleeding, almost suggestive of a fungous condition, you then have the same conditions exactly that you find in scurvy in the adult. There can be no doubt of scurvy in infants. The evidence presented in our meetings by its workers is worthy of profound consideration. These workers come from a country whose practice covers a thousand hills, and their testimony is valuable. Then we have the testimony of Dr. Cotton, our Chairman, who is located in a large city, having to do with all kinds and conditions of children. He sees more sick children, I have no doubt, one hundred to one, with special conditions, than he saw twenty years ago when he practiced up in the interior of Illinois, although he was a busy country practitioner. The evidence of Dr. Cotton along these lines is important. In reading the evidence presented to us by Dr. Booker and others, we should weigh it thoroughly. When a man located in a large city gives his observations, and in addition those as a specialist, in observing the children in the world to-day, and places before us his views as an expert, such evidence is very important. The words and views of Dr. Atkinson on this subject of scurvy in infants are important.

The earliest records of infantile scurvy appeared in Germany from 1859 to 1873, made by Müller and others. The first records that appeared in the English language were by Dr. Smith in 1876, but then it was not recognized as scurvy. Burrow and Schiedel of England, were the first contributors to the subject. Since the presentation by Northrup in 1891, there have been a number of contributions on the subject, and I have enumerated the same in my paper. I do not mean to say that scurvy in infants is frequently found. My cases of scurvy have been found in the houses of the well-to-do, and not among the poor. I believe the general practitioner should be on the alert for scurvy in infants, and I think the literature on the subject is most valuable.

DR. VALENTINE, of New York—The remarks of my friend Dr. Love, suggest a point that I have wished for an opportunity to bring before this meeting. He says that a healthy mother is required to bring forth a healthy child. This is manifestly a self-evident proposition. Is it not a fact that it is within the experience of every one of us, although not engaged in the special work to which this Section is devoted, that a healthy vigorous young girl will marry a man in apparently exceedingly good health, and that shortly thereafter she will complain of pains, rather vague in character, and the girl shows all manner of symptoms which give her friends cause for congratulation. The error is soon manifest. The girl sinks. Perhaps a tumor is found in the abdomen. The tumor grows on that one side, and the other symptoms of abdominal irritation suggest the presence of a foreign body in the pelvis, which entails the necessity of an operation to save this woman's life. A microscopic examination of the majority of tumors, be they of the ovaries or the tubes, shows the presence of gonococci. I am not engaged in children's diseases, but mainly with the fathers of these children, and principally before they are married. I have frequently had occasion to observe manifestations of latent gonorrhea, so-called by courtesy. It is because of defective examination that we do not discover the gonococci. Why not? Because of the difficulties entailed by the examination. Those who favored me by listening to my paper on modern urethroscopy will agree with me that it is criminal for a man to marry who has had gonorrhea, unless it be proved that he is free from the power of infection. Only by destroying the ostii where the gonococci are assembled, where

they are latent, can we extirpate the germ. It is only by destroying these that we can utterly destroy this disease. A week after destroying them it is my habit to make an injection with nitrate of silver. I think I can then with a clear conscience consent to that man's marriage.

Why should this be in the hands of a specialist? Are not the lives of women and children of sufficient importance to the general practitioner? I hold that the time has come when we should have the temerity to put ourselves on record as advocating the enactment of a law requiring, as a condition necessary to marriage, the certificate of a physician that this man who proposes to get married can not infect his wife with gonorrhea.

DR. HUTCHINSON, of Iowa—I think Dr. Valentine's remarks ought to be emphasized by this Section. The number of deaths caused by the gonococci is something to which the profession is just waking up. I happened to have a most painful case of some trouble of this nature brought to my notice a short time ago. We ought to insist upon sounding a danger signal with reference to this infection that is impairing the fruitfulness of the finest women in our country. We should advocate some sentiment on the subject. It would be a difficult law to enforce, and I do not think we can get at the evil through legislation. I should regret the taking of any action that would prohibit marriage on the part of any portion of humanity, because I believe that it might result in something worse. I think, however, it would be well to call the attention of the public to the danger to which women and children are exposed by this disease.

THE ETIOLOGY OF INFANTILE DIARRHEA.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association Baltimore, Md., May 7-10, 1895.

BY ROSA ENGELMAN, M.D.

CHICAGO.

In order to arrive at any just conception of the subject, attention must be directed to the entire alimentary canal, as well as to milk, the staple food of infancy and childhood. A straight almost indifferentiated tube swarms from mouth to arms, with facultative, obligate, saprophytic and pathogenic germs. Milk, particularly during the heated term, is fertile soil for various fermentations, microbic contamination, and the exogenous as well as endogenous development of toxins. An unclean mouth, a slight error in diet, constitutional taint, immature sensitive cellular metabolism invite these germs to unusual lodgment and activity.

Their great number and variety exclude a specific relation to the particular disease manifestations under consideration. The question resolves itself into a discussion of the toxemic, septicemic or pyemic genesis of the several morbid gastro-intestinal disturbances, in which not one or a few, but many and various microörganisms play a part.

Escherich long since proved that there is a great simplicity and uniformity of bacterial vegetation, and that increase and variety was due to changes in diet.

He demonstrated the constant harmless presence of the bacterium lactis aerogenes and bacterium coli commune in the upper and lower bowel, respectively, and their relationship to normal digestion. The assumption of pathogenic attributes by these germs was likewise disclosed.

The rise and evolution of the biologic field revealed the shortcomings of a purely pathologico-anatomic classification of infantile diarrhea. This disorder was in turn ascribed to: 1, disordered structure and function inherent to an undeveloped organism; 2, atmospheric and telluric influences; 3, the chemic constituents, metamorphoses and amount of food ingested; 4, the omnipresent germ. The far-sighted Hueppe foresaw the dangers of biased opinions. He says: "For a time, under the influence of Darwinism, bacteriology ran into absolute generalizations, and differentiating signs were not sufficiently valued. Then the opposite mistake was made, in that differences were overrated and a one-sided conception of microbial species, specific effects and special products was adduced. Toxemia of intestinal origin is foreshadowed by him in his statement that the specific microörganism is not alone the cause of the disease. The significance and evolutionary phase of the above cited factors were for a time swamped in the omnipotent germ theory. The effort to discover specific microörganisms as the causative agents of the different degrees and forms of diarrhea proved futile, but led to the revelations of Escherich, Baginsky, Stadlhagen, Hueppe, Huebner, Booker, Jeffries, Abelons, Sevestre, Vaughan, Czerny, Moser, and many others. They established the non-specificity of the various gastro-intestinal diseases, and gave to us a wide knowledge of the untold microbic hordes, regular, accidental or pathogenic occupants of the alimentary tract.

These scientists likewise confirmed the interdependence of bio-chemic operations and the relations of these germs to the several diarrheal disorders and give to us a reasonable basis for the following postulate: indigestion, slight to severe gastro-intestinal catarrh, and even a foudroyant attack of cholera infantum may be primarily ascribed to an intoxication; this intoxication being caused by an absorption (little or much, slow or rapid) of toxic, tissue and bacterial products, elaborated without or within the body. Intestinal lesions ensuing, the microbic horde, led by such germs as the bacterium coli commune, bacterium lactis aerogenes, staphylococcus pyogenes, streptococcus pyogenes, pneumococcus and others, invade the blood and give rise to general systemic or localized infection, a fulminate or insidious septicemia. Thus also can we secondarily account for pneumonia, meningitis, encephalitis, nephritis, etc., of intestinal genesis.

An accumulation in the food, and concentration in the gut of saprophytes and their toxins explain the inception of a gastro-enteritis, the continuance of which maintains the irritation of an exceedingly susceptible mucous membrane and its nervous director, the coliac plexus.

The unstable abdominal brain that presides over an enormous circulatory territory succumbs to the saprogenic poison. Consequently neither specific nor pathogenic intermediary need be concerned in an attack of cholera infantum. From the fact, however, that the latter includes a number of morbid entities, it might at another time be the result of an overwhelming septicemia instead of toxemia. On the other hand, chronic enterocolitis and pedatrophy might arise from sluggishly acting germs associated with slow, prolonged, poisonous absorption. It has recently been shown that acute enterocolitis results from the invasion of the blood by numerous germs that have been hitherto considered specific only to certain other processes.

A. Rodet and G. Roux in 1892, differentiated between the infectious and poisonous properties of the bacterium coli commune. It and the bacterium lactis aerogenes had been acknowledged harmless intestinal tenants. The former's pathogenic and pyogenic attributes were now recognized as well as its areas of invasion, viz., serous surfaces, skin, glands, respira-

tory and urinary organs. It is thus the admitted disease inciter of such sundry conditions as enterocolitis, pneumonia, meningitis, encephalitis, phlegmon, peritonitis, etc. Its clinical, pathologic and biologic resemblance to the typhoid bacillus is being carefully considered.

Fraenkel tells us that, "pathogenesis is the most inconstant thing in the character of many species of bacteria." Fraenkel's pneumococcus, often a most virulent inflammatory exciter, is likewise a regular tenant of health salivary and nasal secretions as are the pus germs and Löffler's bacillus.

A. P. Ohlmacher in the *New York Medical Journal* April 27, reports finding the diphtheria bacillus in a pneumonic lung in which the diplococcus of pneumonia was absent. The diplococcus was obtained, however, in cultures made from the pus in the meninges of the same patient. Future research will probably throw light upon the curious analogies and associations of these microörganisms and their more definite relations to such diverse disease manifestatations. Much work in this direction has, however, been accomplished in the study of infantile diarrhea. The non-specificity of this affection has been proved, as has also its general toxemic and septicemic origin.

Sévestré as early as 1887 said: "A general infection, especially a condition of pulmonary congestion and broncho-pneumonia, may develop, secondary to fetid diarrhea and infectious enteritis." Under his supervision, Gaston and Renard, by capillary puncture of pneumonic lungs during the life of children suffering from enterocolitis, secured therefrom and from the stools of the same patients, pure cultures of the staphylococcus, pneumococcus and bacterium coli commune and other microbes. Their control experiments upon animals demonstrated that these germs entered the general circulation through the intestinal lymphatics and lodged in the first filter, the lungs.

Rossi Doria publishes an epidemic of diarrhea due to the bacterium coli commune, that remaining *in loco* caused acute enterocolitis, that entering the circulation caused a systemic typhoid-like infection as proven by the pathologico-anatomic findings.

Czerny and Moser recognizing the general infectious character of infantile diarrhea, and traced its source through the lymphatics into the general circulation. They discovered the staphylococcus pyogenes, streptococcus pyogenes, bacterium coli commune, bacterium lactis aerogenes, and other well-known disease progenitors in the stools and circulating blood, of twelve out of fifteen babes suffering from uncomplicated enterocolitis. Their work was carefully controlled by experiments upon dyspeptics, healthy children and animals. Their pathologic findings in the lungs and kidneys corroborated their bacteriologic and microscopic work. All these careful observations but emphasize the dictum as to a general nonspecific systemic infection in acute gastro-enteritis. The slighter and earlier intestinal disturbances are of toxemic origin and due to milk fermentation and contamination. Chronic enterocolitis is the result of a slower, more insidious poison or sepsis. Cholera infantum is either or both an overwhelming toxemia or septicemia. Associated conditions, or the so-called secondary complications are of clearly septicemic or pyemic character, in which not one but several different germs play an important rôle. Dyspepsia, acute and chronic enterocolitis, cholera infantum, may be but different and various degrees of toxemia and septicemia dependent upon numberless and manifold saprophytic, pathogenic microörganisms.

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COLITIS IN INFANCY AND CHILDHOOD.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY EDWARD ANDERSON, M.D.

ROCKVILLE, MD.

Colitis, in the adult, often occurs as a primary disease, but this is rarely the case in infancy. At an early age it usually begins as an enteritis and is most always caused by indigestible substances irritating and obstructing the small intestine. Bottle-fed infants are particularly prone to this disease and I believe that most of those who die, waste away from its effects.

Intussusception is spoken of, as of frequent occurrence in connection with it. I have never seen it, though obstruction more or less complete, I believe, is always present. Heat is an important factor in its causation, as is proved by its being confined almost exclusively to the hot months of the year. A heated atmosphere not only renders the infant's bowels incapable of digestion, but also its food unfit for use, even when we can not perceive it by the taste. An enteritis sometimes runs into a colitis, but the former is generally converted into the latter by treatment with opiates and astringents. A child that is deriving its sustenance from a healthy mother, when attacked by inflammatory diarrhea from being overheated or from any other cause, can generally be relieved at once by the administration of tincture of

opium, bismuth and chalk mixture, but not so the bottle-fed infant. It usually goes on from bad to worse under this same treatment, as does also the child beyond the nursing period.

I will not detain you with a lengthy discourse on the origin, symptoms and progress of this disease, with which you are familiar, but will cite three cases which I hope will prove of interest:

July 3, last, I was called to see a little three-months-old female child, in a family I had always attended. The parents had three other children, all of whom had been nurtured at the mother's breast, and when attacked by diarrhea were almost immediately restored to heath by the administration of opium, bismuth and chalk mixture, but not so this youngest, who was being raised artificially. The parents had become familiar with my prescription, as persons too often do, and had treated their older children successfully with it, but this youngest child they had treated into a case of ulcerative colitis with the same remedies. I prefer mechanical means in the treatment of disease, wherever they can be employed, so I attempted to use the syringe in this case but failed. It required some force to introduce the nozzle of the syringe and the water was thrown back as rapidly as injected. Had I persisted, the only question would have been which was the stronger, the bowel or the syringe. Having failed with everything else, I took a pill containing 2 grains of blue mass and half a grain of opium, that I always carry for adult cases, and divided it into twenty pills, ordering one such pill to be given every four hours. I continued this treatment for two weeks, by which time improvement was so great that the amount was reduced to three pills a day and enemas could be satisfactorily employed. When first called to see the child it was being fed on condensed milk which was changed for a more laxative diet, cow's milk with dextrine. At the end of a month this child was perfectly well and is now one of the most robust children I know.

From former experience I feel convinced that had this little patient been treated in any other way it would have wasted and died.

On Aug. 10, 1894, I was called to see a male child five months old, suffering from ulcerative colitis. This child had been treated by another physician for two months and was gradually getting worse all the time. A sister at the same age had died a year before affected in the same way. I was put in charge of the case and treated it in the same way as I did the last, except that instead of directing the blue mass and opium pill to be divided into twenty parts, I divided them into ten, giving a fifth of a grain of blue mass and a twentieth of opium every four hours. After two weeks, fecal matter began to descend freely, when I ordered a syringe to be used after every action that was not perfectly satisfactory. At the end of a month this child was well and has remained so since.

About June 20, 1894, a little 5-year-old son of a Rockville druggist was attacked by inflammation of the bowels; the nature of which I could not clearly determine as he was attended by another physician of this place who had been their family physician before I settled in Rockville. He treated the case until July 18, when I was called in consultation. I not only met the attending physician but a prominent physician from Washington also. Another physician of at least thirty years' experience had been in consultation, but I did not meet him until later on. I found the child a mere shell, lying on his back and unable to move. He could not have turned on his side if a red-hot iron had been thrust in his face. When I entered the front door the house had the odor of a dissecting room, although the sick boy was upstairs. The mother said he had had but one action that day, which I requested them to let me see, and found it nothing but necrosed tissue. The father, who is one of the most intelligent and best informed men I ever knew, said not a particle of fecal matter had been passed for ten days. The attending physician never expressed an opinion in regard to the case, at least in my presence, but the consultants were of opinion that intussusception was present and rather favored the treatment then being employed, that by opium, bismuth and tannic acid, although the child was dying under its use. They did not speak decidedly as to what should be done with the little patient, but were opposed to my plan of treatment, which was to give a grain of blue mass and one-fourth of a grain opium every four hours, until the child improved sufficiently to have the number of doses reduced, and then employ enemas. The consultant whom I met July 18 said he would be afraid to try an enema at that time, for fear the bowel would burst, as he believed that in many places there was nothing left of the colon but its peritoneal coat. I saw no more of this case until July 23, when I received a note from the child's father, asking me to take entire charge of the case, as he believed I was the only one who could save his boy. He notified the attending physician to that effect.

I had been giving my patient a grain of blue mass with one-fourth of a grain of opium every four hours for three days when the second consultant came up. He considered my treatment heroic, but said as the child would die anyhow, I was justified in trying it, but he would advise me not to keep it up for more than three days. I continued it for two weeks with improvement from the very first. I then stopped it for three days, when I was obliged to resume it on account of retrogression. I kept it up until September 13, when the boy was able to walk and eat solid food. This patient was fed with milk and dextrine mixed together, and with extract of malt, and I allowed him to chew as much beef, mutton and chicken as he wanted and swallow the juice. There was so much weakness present that two teaspoonfuls of whisky and a drop of fluid extract of digitalis had to be given every four hours, also one-sixtieth of a grain of strychnia three times daily to prevent sinking.

When I first saw the child he could take no nourishment; even a tablespoonful of milk had to be forced down his throat. Blue mass, on account of its sweet taste, is very easily administered to children, and can be dissolved in a few drops of water. In using this treatment in cases such as I have described, we should not restrict ourselves to a day, week or month, but give it until the patient is well, for it never produces constitutional effects in dysentery except in tuberculous individuals, and with them it should never be employed. It used to be thought and is now generally supposed that no one is as sound after a severe attack of dysentery as he was before, but I have never treated a case by the prolonged use of mercury where the health was not improved thereby except in tuberculous subjects. Why the mercury produces no constitutional effect I am unable to say, for it certainly enters the circulation, or it would not act on the kidneys as it does. In no other disease can it be given with such impunity. To sum up all I have to say, in regard to the treatment of this disease from which so many infants, and especially bottle-fed infants, slowly pass away and from which few, if any, should die: the child should be put on a nourishing liquid diet, which should be laxative in character; the colon should be irrigated with warm water from a fountain syringe as soon as the inflammation of that viscus has sufficiently subsided to retain it; blue mass and opium should be administered in doses suitable to the age of the patient, until all irritating and obstructing substances are removed from the intestines and their natural function is restored. In this way, mercury, the best of antiseptics, will be kept continually pouring over the diseased coat or coats of the bowel during the process of repair.

Diuretic Action of Calomel.—Dr. Finkelstein at Charkoff, Russia, summarizes his experience as follows: 1, calomel is an excellent diuretic and especially useful in cardiac dropsy; 2 the prognosis is less favorable in aortic disease; 3, the action is greater in the absence of renal complications (except suggestion); 4, the dosage must be guarded (maximum .12 gm. every two hours); the first symptoms of mercurial poisoning must be closely heeded; 5, in case of a weak heart, a combination of calomel and digitalis is recommended (℞ calomel .12–.13 gm., pulv. fol. digitalis .02–.30 gm. S. Dose, four times a day.); 6, the effects of calomel are continued longer than in the case of other similar remedies.—*Therapeutische Wochenschrift*, July 25, 1895.

PSEUDO-MEMBRANOUS ENTERITIS ASSOCIATED WITH ASCARES LUMBRICOIDES.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY IRVING M. SNOW, M.D.

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(SYNOPSIS.)

This case of pseudo-membranous enteritis occurred in a girl of 2½ years. During the summer of 1894 she suffered from a severe attack of whooping cough, followed by ileo-colitis lasting six weeks. In the most acute stage of the diarrhea she began to pass pieces of membrane and tubular casts of the bowels; six weeks later, the membranes being daily present in the feces, several round worms were evacuated, after which no more membrane appeared in the stools for four and one-half months, when, coincident with an attack of grippe-bronchitis, bits of membrane and two ascarides were passed for two days. No recurrence of the membrane casts since.

On Sept. 27, 1894, a little German girl aged 2½ years was brought to me with the following history: father dead of sarcoma of the rectum, mother and one sister living. The patient was born after a normal labor and reared on condensed milk. During dentition she frequently suffered from bronchitis, five or six attacks in all. In June, 1894, she was quite ill from vaccination. After the vaccine fever she was attacked by pertussis and was harassed by a frequent paroxysmal cough in July and August. In August the whooping cough was further complicated by an inflammatory diarrhea. The acute stage of the ileo-colitis lasted three weeks, there being ten or eleven stools of blood and mucus daily. The mother watched the discharges with anxiety, having recently nursed her husband, who died of malignant disease of the bowels. On August 25, the diarrhea being at its height, she observed, mixed with the passage, bits of membrane and a long ribbon-like whitish substance. This she separated from the blood and feces by pouring water over it. The mass filled one-half of a 6 oz. vial; it was twelve inches long; the surface was honeycombed with small apertures. Its shape was like a narrow piece of cloth. It formed a tube in which a finger could be introduced and around which it fitted like a glove.

From this time the diarrhea gradually subsided and the child slowly gained in health, yet from August 25 to September 27, thirty-four days, each day the feces were mixed with tubular casts and bits of membrane. Some days there were membranous tubes, at other times only pieces of membrane. Blood was occasionally present in the evacuations until September 20. The passage of the stools and membrane was accompanied by no pain or colic either before, during, or after defecation.

Such was the history of the case up to the time of my examination.

September 27 my patient was a strong, ruddy, well-grown little girl of placid temperament. The tongue was clean, appetite good, sleep natural. The child was on adult diet. There was no abnormal tenderness, nor was anything abnormal found in chest, abdomen or urinary organs. The stools numbered two a day, were of the consistency and color of mustard and contained no undigested food. The membranous cast passed that morning was shown to me. It was tubular in form, fitted closely about my little finger, whitish in color, thin, glistening, transparent in texture, three inches long, one-third inch in diameter. It had kept its shape in alcohol for two hours, and did not tear easily. I made no chemic or microscopic examination, expecting to have another specimen to examine, which was not the case.

I prescribed cod-liver oil, an out-of-door life, generous diet, and directed the patient to be brought to me in a few days. On October 1 the mother related to me that the quantity of membrane passed was much smaller, being only seen the first two days after my prescription. On October 9, the mother reported that the day before the girl had passed a piece of membrane, and that just before she came to my office she had passed a round worm, the first the child had ever had. One or two passages a day; patient's weight twenty-seven pounds.

As all descriptions of membranous enteritis state that shreds of membrane may be mistaken for worms, I advised the mother to continue the cod-liver oil, and to closely examine each stool. The girl continued in good health, albeit somewhat feverish on October 17. A week later, to decide as to the presence of worms, I administered calomel and santonin. As a result of this medication two ascarides ten and six and three-fourths inches long were evacuated, but no membrane. Two days later, after more santonin and calomel, two more round worms, eleven and six inches, were discharged. No membrane. The medication proved quite severe, for after it the child was weak, exhausted and feverish.

From the last of October until February 15 the child was in superb health, but in the middle of February she was attacked with grippe and bronchitis, being ill three weeks. On March 3 a laxative produced loose stools which for two days contained bits of membrane, but no mucous cylinders. March 6 to 7, two large lumbricoid worms were passed after doses of calomel and santonin. The repetition of the anthelmintic brought away no more.

From the last date, until now, the child has continued in good condition; neither mucous cylinders nor ascarides have been observed in the feces.

It is to be noted that the discharge of casts and membrane practically ceased in October; the depression of health in February caused the exudation of only minute pieces of membrane. You will note that no elaborate chemic or microscopic examination is presented. There was no opportunity to do so, as the membrane in the feces stopped abruptly, possibly from the tonic effect of the cod-liver oil. Nevertheless the composition of such tubular casts of the intestine is well known. They are generally formed by mucin exuded from the muciparous glands of the intestine, the glands of Lieberkuhn. Although many learned authorities deny the fact, it is certain that the casts may contain fibrin as well as mucin. Their place of origin is generally the colon, rarely the small intestine.

The interesting features of the case are:

1. Membranous enteritis is rare in children, nearly all cases being recorded as occurring in women of hysterical neurotic temperament. Of 111 cases recorded up to 1894, only 6 were reported in children under 10 years.

2. The clinical history of the case is unusual. In the descriptions of membranous enteritis, the passage of the tubular exudation casts is said to be painful, being preceded by malaise, abdominal colic and tenderness, accompanied by pain and tenesmus and followed by constitutional disturbance. In my case the condition was the sequel of an acute ulcerative ileo-colitis; the exudation casts appeared in the stools, mixed with blood and mucus, at the height of the acute infectious process. They were continually present during the subsidence and after the termination of the malady. Thus they were daily evacuated while the child was rapidly gaining strength. Four months later during a grippe-bronchitis a few bits of membrane were passed. Nor did their discharge cause the child any more discomfort than the passage of a normal stool. Neither colic, tenesmus, nor abdominal tenderness could be traced to their presence.

3. The relationship of the ascarides to the casts is obscure. Undoubtedly the parasite found lodging in the child during the depression of health from the colitis. It is possible that the mechanical irritation of the worm may have caused the exudation of mucus. Yet the habitat of the ascares lumbricoides is in the small intestine, while the exudation casts judging from their caliber originated in the colon; nevertheless round intestinal worms are commonly seen in young children, while membranous enteritis is excessively rare in early life. As round worms were undoubtedly present in the intestines two or three months after the tubular casts had disappeared, it is the opinion of the author that the association was accidental. Whether the condition is a phase of mucous disease the author will leave for discussion.

Loos describes a similar case in an article in the *Prag. Med. Wochenschrift*, 1889:

"A 2-year-old boy, previously in perfect health, was taken suddenly ill. He cried the whole night with abdominal pain, and finally voided a single stool, which contained a peculiar substance. An examination showed it to be a tube 18 centimeters long and 4 centimeters wide. It was composed of fibers; some running parallel with the length, others branching in various directions. These fibers were connected by a glistening homogenous membrane. The whole was enveloped by cloudy membrane. The tissue was concentrically built and held in its substance pigment, eggs of oxyuris, intestinal epithelium and *debris* of food; chemically, mucin and fibrin were present. The membrane continued to be present in the stools ten days, the general condition remaining good. Fourteen days later, there was discharge of a large number of ascarides. Rudolph von Jaksch finds the process to be a periodical exudation of mucus which causes the colic. The condition is analogous to chronic bronchial catarrh."

SULPHATE OF MAGNESIUM IN THE SUMMER DIARRHEA OF CHILDREN.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY STUART PATTERSON, M.D.
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The use of magnesium sulphate in the treatment of cholera æstiva is not new, particularly in the rural districts.

It is unnecessary to go into detail as to the history, symptomatology, etc., therefore I shall merely review the conditions present and the indications for treatment. As yet, no specific cause has been found, but we can almost certainly conclude that there "are fermentative and septic processes in the contents of the stomach and intestines, and these followed by production of large quantities of lactic and fatty acids."[1]

According to Escherich, Baginsky, Booker, Vaughan, Lesage and others, these changes are most probably brought about by microörganisms gaining entrance into the alimentary canal with the food.

The following are the reasons for the belief in the specific origin of the disease:

1. It is one occurring for the most part in epidemic form during the summer months, a time when fermentative processes are most common. Or, if it does occur in winter, it is almost invariably found in close, ill-ventilated, and crowded quarters. (Epstein.)

2. The majority of those attacked are the offspring of the poorer classes, who have both insufficient and unwholesome food, and this brings about an ill-nourished and consequently a weakened condition of the organism, which furnishes a proper nidus for the growth and development of fermentative fungi.

In many of the cases of this report, the mothers were women who could only nurse their children morning and evening, while for the rest of the day the little ones were left to the tender mercies of careless and ignorant brothers and sisters.

3. In the great majority of these cases, except those seen during the first twelve to twenty-four hours of the disease, the discharges from the bowels were acid. It has been found that fermentative fungi are present in vast numbers in all the stools, but are *especially* numerous in those having an acid reaction. (Nothnagel.)

Henoch, vol. II, p. 42, in the absence of a recognized specfic cause, explains the primary process as "an abnormal chemic action in the contents of the stomach and intestines, set up by unknown influences, and not merely a catarrhal process, although on microscopic examination, proliferation of round cells has been found under the mucous membrane." This can be and is produced, if the process goes on for several days, by the irritating contents of the intestines.

The cause, whatever it may be, finds its way into the stomach and intestines, in all likelihood, through the ingested food and water. The indications for the treatment are to remove the cause if known, and prophylaxis. To meet the first, magnesium sulphate seems to me to be, theoretically at least, the ideal remedy. As to its practical utility, this report will speak for itself. To meet the second indication, sterilize the food.

The administration of sulphate of magnesium calls forth a profuse secretion from the intestinal glands. The remedy is a powerful alkali. It stimulates peristalsis, either directly or indirectly, through the quantity of secretion poured out or by producing a free flow of bile—one of the natural stimulants to peristalsis.

Thus we have a remedy which, 1, corrects the irritating properties of the contents of the stomach and intestines by rendering them alkalin; 2, stimulates the glands to a more profuse secretion, thereby unloading a congested mucous membrane and possibly washing out the products of fermentation; 3, flushing the entire bowel, thereby removing the fermenting mass.

In the first series of twenty-five selected cases treated during August, 1892, at the Pittsburg Free Dispensary, which I report, the symptoms were those usually found in the disease under discussion, namely, vomiting, diarrhea—ranging from the "chopped spinach" stools, mixed with mucus and streaked with blood, to the rice-water discharges—coated tongue, restlessness and general prostration, etc.

The ages ranged from 1 to 6 years. The dose and mode of administration of the remedy were as follows: the mother was directed to give to a child 1 year old an even teaspoonful (about 1 drachm) of sulphate of magnesium, sufficiently moistened to swallow, as soon as she arrived home; the process to be repeated in the morning and the child brought back to me at 3 o'clock P. M. on that day, that being the hour of my service at the dispensary.

This procedure was repeated daily at the same hours until the discharges become yellow. For the older children, the dose ranged from a heaping teaspoonful (about 2 drachms) to a tablespoonful (about 4 drachms).

As the result of the exhibition of these doses, the mothers reported the children relieved of pain and restlessness, with the induction of quiet sleep. No difficulty, except in a few cases, was experienced in the administration of the remedy on account of its objectionable taste. The after-treatment consisted of general tonics.

Report of the duration of the disease, first series: one case, nineteen days; one case, five days; two cases, four days; seventeen cases, three days; four cases, two days.

In the second series of fifty-five cases, treated during 1893 and 1894, the results were slightly different. Ages 6 months to 9 years: two cases died; four cases, fourteen days; six cases, seven days; twenty-three cases, five days; thirteen cases, three days; seven did not report after the first day.

In the cases lasting over one week, the children

[1] Henoch, vol. I, page 128.

suffered relapses and several were sent to the Children's Hospital. The other cases all did well, and I saw them thriving under a properly regulated diet and tonics. I should add that in the latter series I gave guaiacol for several days after the stools became normal. The tonics were selected according to the necessities of each case. Those most frequently used were syrup of iodid of iron, cod-liver oil, compound syrup hypophosphites, strychnin, quinin, pyrophosphate of iron, etc.

This list includes all the cases that were selected for trial by this remedy, and the practically uniformly beneficial results obtained in the treatment of this so often intractable disease have led me to give you the benefit of my experience.

DISCUSSION ON PAPERS OF DRS. ENGELMAN, ANDERSON, SNOW AND PATTERSON.

DR. KOPLIK—Taking up the paper of Dr. Engelman, of Chicago, I might say that most of us have met those cases in which there is the presence of toxemic and septicemic symptoms. The prognoses given in those cases are generally faulty, but lately I have seen some of them cured, even though the pneumonia lasts a fortnight. This is due directly, as we suppose, to microbic influences from the gut.

Now as to the treatment of some of these cases of diarrhea in children. One of the gentlemen here to-day spoke of calomel, and the other spoke of magnesium sulphate. Both of the ideas are the same, but I think in acute intestinal catarrh, and especially in that form called cholera infantum, we should be careful in the use of mercury in any form. In acute gastro-enteritis in infancy, and in young childhood, we have to deal with the sensitiveness of the kidneys, for instance. We have to contend with cases where it is likely the use of mercury in any form will cause death. As to magnesium sulphate, it answers the same purpose, and it is better than castor oil, or any like remedies which we are accustomed to use in the beginning of the treatment of those diseases. It is scientific and proper to try to clean out of the bowels that which is injurious, as well as that which is toxemic and septicemic. We should first recollect that most of these cases are due to some error in the diet, either bad food or good food improperly prepared. So that the first thing in all these cases after you have begun the medicinal treatment is to stop all diet, diet which requires any amount of effort on the part of the intestines, such as milk. In my practice, that is the first thing to think of. It has been said in rebuttal, whenever I have mentioned this fact, that the child would starve. You would be surprised how long a child can live upon a simple mixture of the white of an egg and water. I think the only safety of the child lies in starving it at the outset, and in the beginning of the treatment we should direct our attention to the diet and stop it, and afterward gradually return to it.

The medicinal treatment in acute gastro-enteritis has been very unsatisfactory. I use little medicine in the treatment of acute and chronic gastro-enteritis, and I can assure the Section that I see about as many such cases as are seen in any hospital. I use very few drugs, probably a little resorcin, and probably a good deal of bismuth. I might say that I consider bismuth a sort of standby. It is a mild intestinal tonic.

DR. W. D. BOOKER, of Baltimore—In considering the etiology of infantile summer diarrhea, it is important to think of something beside bacteria as the cause. We have the bacteria operative in the winter time, and the same bacteria may be found in the intestines of infants in winter as well as summer. There must be a predisposing cause operating therefore by which the microörganisms are brought forth. What that secondary cause may be, we are not so well informed. It is possible that the direct effect is the prostrating of the digestive powers of the infant, and probably the weakening of the cells of the intestines themselves. There must be then, beside the bacteria entering into the etiology of summer diarrhea, many conditions that we do not understand. Now, the question is, in what way must we consider first the action of the bacteria before they enter the body, second, the action of the bacteria after they have entered the body. In summer time the bacteria multiply much more rapidly than in the cold of winter, and they cause much more serious effects in summer than in winter. Milk especially, which is the food of the child, is very favorable to the growth and activity of bacteria. But a short time in summer is sufficient to permit very serious changes in the milk, and poisonous qualities to be introduced by the microörganisms, unless something happens to the intestines before the bacteria get in. As soon as these cells are injured in any way the bacteria have an opportunity of getting in their work. Beside the heat itself, we have to contend with the improper food. I do not mean the food that is made improper by the bacteria, but rather the imprudent feeding of the child with food that is entirely unsuited for its digestion, such as green potatoes, strawberries and the early vegetables. In nearly every case we are called upon to treat, we first inquire as to the origin of the disease and get the answer that there has been some imprudence in the matter of diet. If we keep off this meddling in the diet the resistance of the cells is preserved, or their entirety preserved, and their resisting qualities are sufficient to beat off the bacteria. After this lesion is once established, it is easy for the bacteria to do their work, and this they do as has been outlined in the paper read here in two ways; one by the production of poisonous properties in the intestines, which are absorbed and taken up in the various parts of the body, and the lesions made by these poisons are similar to what we get in diseases like diphtheria. Again, this poison, which is produced by the bacteria in the intestines, may also act directly on the tissues, and we get lesions which show the various stages of the bacteria in their direct effect. As the bacteria spread we have produced superficial ulceration. The bacteria become more and more numerous and the process extends to a deeper ulceration, which may pass down as far as the external muscular coat. There is no difficulty, in some cases, in tracing bacteria along this line, first through the superficial layer that has been broken, and so on. Where we trace this bacteria, we find the separative processes going on.

Now, what are the forms of the bacteria that we find in summer diarrhea? Investigations which I have made for the past few years on this subject have led me to the belief that we find the same bacteria that we find every day. There is nothing specific in the nature of these organisms, and the nature of the disease is so variable that there is no classification found in one text-book that will correspond with that found in another. In classifying the cases from the contents of the rectum, I have made classifications in about eighty cases, according to the various forms of the bacteria, and not with regard to the clinical condition of the patient. It is interesting to see how this classification runs. The first classification consists of the cases which show decided toxism. They have not developed any serious inflammatory changes in the intestines to be traced by any condition in the stools, but the child shows drowsiness and much nervousness. These cases are generally more or less serious.

The next class is twenty or thirty cases in which the streptococci prevail. Nearly all these cases show inflammatory changes in the cells in the mucus and feces. These cases are generally more serious because of complications by other lesions. Not only the complication from the absorption of the toxin particles, but also the invasion of these organs by the bacteria themselves. This secondary infection is more apt to follow in cases in which the streptococci is found. There are few cases in which the micrococci alone is seen.

In regard to the treatment of summer diarrhea, I think the most important consideration is dietary and not medicinal. There are very few medicines that we can rely upon, and I was very sorry to hear Dr. Koplik speak against one that I have always thought wise to use. The first thing to do, as Dr. Koplik said, is to stop everything at the time the sickness occurs. If it be milk or any other food that was being taken, at the time the child became sick, stop it at once. I think this is better done by substituting rice water or oatmeal water for the milk, and to give some purgative. I have for years used calomel, and have not seen any bad results from it. Of all the drugs in the Pharmacopœia, in cases like this, calomel is the one I use. It acts not only by relieving the stomach of its contents, but there is an action of the calomel upon the mucous membranes generally that we do not understand. It is my belief that this is a valuable remedy.

THE CHAIRMAN—What dose of calomel do you give?

DR. BOOKER—It should be given in very small doses. To a child six months old, a sixth of a grain should be given every hour until a grain or more is taken. Calomel acts somewhat as an antiseptic. If we get rid of the fermentation, and give the child food that it will digest with the least amount of effort, and which produces the least amount of poisonous product from the bacteria, the disease can be checked very early. I think in the majority of cases of summer diarrhea, if taken in the beginning and treated as to

diet, and if we administer purgatives in the beginning, and gradually go back to the milk, and not be in too big a hurry about it, we can carry a child on cereal water for several days without serious results. If restlessness on the part of the parent should occur on account of taking the milk from the child and substituting cereal waters, then egg water is very good. The white of the egg should be beaten up and allowed to stand for a few hours in a cold place. Then pour the clear part off from the bottom, and a teaspoonful of this clear white of the egg can be dissolved in three or four teaspoonfuls of clear water, and be given as a substitute for the cereal waters. After the disease has gone on for a week or couple of weeks, medicine does not have much effect, and diet must be the main reliance.

The most important point in all the treatment is not to give too much food. Do not be afraid of starvation, but give the smallest quantity that the child can digest. Later on, the opiates may be necessary. In certain cases nothing will relieve the restlessness and pain and frequency of stools like the opiates, but care should be used in giving them. The smallest quantity should be given and no rashness exercised in this respect. Bismuth is more or less disappointing. We all give it because we are puzzled in these difficult cases to know what to do, but in a few cases, perhaps bismuth does give marked relief. In cases that become discouraging, it is hard to find anything that is good. Irrigation sometimes gives relief, but we should select the cases in which irrigation is resorted to. Where there is an inflamed condition of the intestines, it is a question whether irrigation should be carried on; but if irrigation is carried on under those conditions, it is well to raise the buttocks of the child, holding the shoulders and letting the water run in by gravitation.

In those cases where there is drowsiness and stupor and frequent stools, with more or less fever, irrigation will often relieve all the symptoms in a few hours, but to do this irrigation thoroughly the catheter should be inserted as far as it will go—its full length—and from one to two gallons of water can be used. The water is running in and out, all the time. There is no danger of rupture of the gut, and a free irrigation in these cases, as a rule, relieves the symptoms. I have seen the fever disappear after such an irrigation of the child, and it becomes bright and lively where previously it had been stupid.

Dr. Rigg, of Pennsylvania—It is my belief that there are other influences than bacteria. The clearing out of the bowel and stopping of food are certainly two of the first things to be sought. After that the course is not so clear. I want to speak more especially of one particular type of diarrhea. I believe we do not discriminate closely enough between the different types. In that form of gastro-colitis where we have watery stools and vomiting, with great prostration, I know of nothing equal to nitrate of silver. In my own hands, that has been the most satisfactory drug I have ever used. After the food is stopped and the alimentary canal cleared out, then give a water solution, small doses of nitrate of silver often repeated. I do not know why this acts as it does, other than it is astringent. I think it is sometimes in that case like other cases of irritation of the mucous membrane, we get in a short time the effect of an irritation. It may take quite a while to get rid of the effects. If you get an irritating substance in the eye, it will produce an inflammation that will make you treat the condition at once, and not pay any attention to the cause. So it is in these other cases. The nitrate of silver, I do not believe, has anything to do with the removal of the cause, but it has to do with the healing of the bowels and the stopping of the watery diarrhea.

Dr. Griffith, of Philadelphia—I think the heat in our cities is a great factor, not by increasing the germs inside or outside of the body, but in the general condition of the child. I can not account in any other way for the benefit that invariably follows the sending of a child into the country as soon as possible. It is our custom in Philadelphia to send the mother with the child for a trip on the river, where we have a steamboat for the purpose. The babes who go on these trips apparently dying, come back in a very much improved condition. No change has been made in the diet, and nothing has been done except to remove the child from the excessive heat of the city. So we have every reason to believe that the heat has as much to do with many of these cases as anything else.

With regard to treatment, I, too, want to add my voice to those who favor starvation. I think the starvation of the child, after all, is the most important thing you can do. Most mothers in the dispensary class, and it is in that class we see most of these cases, are not willing to see the children starve, and on that account I advise them to give barley water, and where nourishment is required I prefer the egg water. We have to remember always what we are dealing with, what the child is suffering from at the time, and what the stage of the malady probably is. The large intestines of children dying from diarrhea are found to contain comparatively few germs. The germs have been washed out of the small intestines, and therefore it is not right to give the child a purgative with a view of washing out the small intestines when the diarrhea has gone on long enough to wash them out. As to the purgatives, whether castor oil, or magnesium, or what not, depends somewhat on the stage of the case. If we think that the small bowel is comparatively empty, and the large bowel is not, that calls for certain treatment. What drug we shall use, depends on the condition of the case. If we feel that a large number of bacteria is present, and are doing the damage, then we might use an antiseptic, but I have little faith in intestinal antisepsis. I want to add my voice to those already heard here in favor of the use of opium in these cases. A few years ago the man who would advocate opium would have been called a know-nothing. I think now that many believe opium must be the standby in the future. If we are sure, from giving no food, that the bacteria will have no longer anything to live on, and that we have emptied the intestinal canal, we see very clearly that we have to do with something that is acting from the inside, and our remedies then must be directed to the treatment on the inside, and in those cases where a child is suffering evidently from frequent and profuse passages, opium will do work that no other drug will do.

I do not want it to be understood that I advocate a routine treatment with opium. A few years ago I made experiments in the Children's Hospital with different drugs in the treatment of summer diarrhea, putting some children on starvation, and some on bismuth, and nothing else, and giving some opium and nothing else. I found that those that had the starvation treatment did as well as any of those that had no drug but opium.

Dr. Weaver—It seems to me that in private practice it is impossible to give magnesium on account of the disagreeable taste. I do not see how in ordinary practice it is possible to administer magnesium. I know it is impossible for me to use this medicine with any degree of utility. We have remedies that are more palatable, and except where you want to experiment for the sake of seeing the effect of the medicine, it seems to me it is unnecessary to use a remedy like magnesium.

I approve entirely of the treatment which has been so well outlined by the gentleman from Baltimore, and the gentleman from Philadelphia, and in the end I think it will prove better than anything else. I agree with them that the best method is the elimination of every offensive particle from the bowel, and the taking away of food. I am in the habit, in those severe cases, of putting the child on a diet of hot water slightly sweetened. I find that the child likes it very well. After feeding a child last summer on hot water sweetened, I found when I wanted to return to the milk, that the child refused to take it. It had learned to like the sweetened water. I am very sure that the hot water had a great deal to do with the effectiveness of the treatment. Calomel I have great faith in, and I think we are on the right path when we use it to clear the alimentary canal. I think opiates necessary. I use morphia with 1–150 of atropia.

Dr. Fischer—Dr. Neumann, after making an extensive study of this subject in Germany last summer, said that the routine method of treating was first to sterilize the intestinal tract and then sterilize the food. Beside washing the stomach, the bowel was irrigated by raising the child and allowing the warm water to flow by gravity as high up as possible. At any rate his plan was to wash the stomach and rectum with a saline solution, and he said that if the child's pulse was very weak and the diarrhea severe, in addition to washing they use this hypodermic clysis in whatever quantity necessary to flow under the skin. I have used this hypodermic clysis several times, but only in these true forms of cholera infantum as we see them in New York, and have found them beneficial.

I should like to come back to what Dr. Griffith has said in regard to taking children away from the heat of the city, putting them on boats and sending them on the water. I should like to emphasize that more strongly than Dr. Griffith has. We all know that salt water is binding. Passengers on the ocean complain of the constipating influences of the sea trip, and therefore the child not only has the benefit of the fresh air, on one of these boat-trips, but also has the benefit of the constipating influence of the salt air.

There is one drug that I have seen used abroad with good success. After the intestinal tract has been sterilized, and after the administration of the castor oil or magnesium, and whatever it may be, the drug that is giving the most satisfactory effect abroad is beta-naphthole bismuth. It is an ordinary bismuth combined with naphthole. It is not poisonous, is very well taken by the child, and I have found that it produced good results in those cases where I have used it.

DR. S. S. ADAMS, of Washington—My experience has taught me that a great deal can be done simply by removing the child from the heat of the city. This was impressed upon me more forcibly last summer than ever before. From June 8, until the middle of September, we had in Washington almost continuously a temperature above 80, with its usual ill effects upon infantile life. During this period I was attending the little ones in the Foundling Hospital. We removed the children from the commodious quarters of the city to a suburban place in what is called the National Park. Although this tract has been bought by the Government, it has not been improved yet, and a large house, occupying quite an elevation, with a stream of water running through the place was the new home for the little ones, It was a most favorable locality and the best that could be selected for the purpose. Unfortunately, however, the children were so closely packed together in this farm house, that there was hardly 300 cubic feet for each child. I had ample opportunity for making examinations, and was surprised at certain things which these examinations developed. Fifty per cent. of the children removed to this place died, and of that number the largest number of stools passed by any in twenty-four hours, was ten. This was a very small number in cases ending with such fatal consequences. The average number of stools in the children who died was six. There were no intestinal lesions in those who died. The conclusion that must be arrived at in such cases is that these ill effects were due to heat. In spite of the elevation of the place, the temperature, night and day, ranged from 85 to 90, when there was a free circulation of air. It is just possible that at some time during this period there was contamination from a sewer that emptied above. The city water, however, was in use there all the time. I believe a great number of deaths were due to the excessive heat. I visited the institution in the morning and got the history of each child's night. The next day I would probably be told that that the child had during the night a couple of stools, and they would be exhibited to me. They would show some caseine, and there were evidences of some intestinal disturbance. It was not unusual for the messenger to come to my office later in the day, and inform me that the child was dead. Of course these things were not easily reconciled to my mind. I had heard from gentlemen who are connected with institutions having from 900 to 1,000 foundlings, and young children, that such cases were not rare, but personally I had no such experience. These cases were treated upon the principles laid down by Drs. Booker and Griffith. I must agree with those gentlemen that a great mistake is made in not drawing the line between irrigation and injection. Some inject instead of irrigate. If you do not provide for the return current, you will not get the beneficial effects that you expect. In this connection, I will relate an incident. On June 22, last, I saw a child with gastrocolitis. It was an aggravated case, and had convulsions. I think he was 27 months old. He lay in a state of coma for several days, and finally, I came to the conclusion that he would die if not taken away. The child was kept alive from Thursday to the following Monday with brandy and water. Nothing else passed his lips. The treatment of the rectum was tried without success. He was kept alive in this condition until July 12. On that day I went to the signal office, and ascertained that another hot wave was coming, and would reach its greatest intensity on the Sunday following. I at once informed the mother that there was no chance for the child to recover in the city, and that it must go away. The child had had during this period from twelve to twenty bloody stools a day. At 12 o'clock at night, in company with the nurse and mother, we started with the child for New York. We reached the Hudson pier the next morning, and took the steamer north on our way to the Catskill Mountains. The mother got it into her mind that this was the only place to go. That night the child had had twelve stools. He was in a very low condition. At this time he was being fed on chicken jelly and lamb broth. Going from the elevator the temperature in the car was 110. The child was fanned and I thought he would die every minute. I have heard those who said that they could count a pulse beating at 160 or 180. I can not do that. When I felt this child's pulse, I could not, however, notice anything more than a flutter. The child had not spoken for two weeks. By the time we had reached the top of the grade and had got the benefit of the changed temperature, the child asked me if I would take him out riding. When we got to the hotel he had one stool in the morning and another at 11 o'clock at night, and did not have another for forty-eight hours. He had no medicine whatever during all that time but whisky, and I attribute the recovery solely to the change of climate. I believe that if the child had remained in Washington, he would not have survived, as the temperature the following Sunday reached 105 in the shade. The child returned home in a healthy condition.

I was once called up to the mountains of Maryland around Frederick, and found a child in about the same condition as the one I have referred to. It had had twelve stools during the day. At 10:30 at night on the top of the mountain, the thermometer registered 86 outside on the porch. I expressed the opinion that the child could not survive in such a temperature. He was taken to Narragansett Pier, and to my surprise he never had any more bloody stools after he reached there, and he became well without any medication whatever. Sueh cases illustrate the beneficial influence of change of climate.

Dr. Anderson, I think, is very fortunate in his expression. I do not think that we can place much reliance upon dispensary statistics. I do not believe that in the majority of dispensary cases, the traatment is carried out, as far as the diet is concerned. The appeal of the child has great weight with the family, and even in our institution, I have caught people smuggling things to the children in the hospital. For instance, in the case of typhoid fever, where they are warned to the contrary, we have had nurses take a can of cabbage and bacon from under the skirt and give it to a patient. I agree with Dr. Weaver that it is difficult to get anybody to take sulphate of magnesium. I tried it once myself, but I do not want to try it again.

DR. ANDERSON—There is no question about heat being almost exclusively the cause of these cases. In the country we can not take our children to the Adirondacks, or to the Catskill Mountains, or to the springs, but we can take them from the upper story to the cellar, and often save them that way. I lost a valuable member of a family I knew well, by administering a dose of chenipodium. My rule is to give either calomel or blue mass. Blue mass can be dissolved in a little water. Mercury in certain of these severe cases is the only thing you can give. You can not use irrigation in the beginning. There is a spasmodic contraction of the bowels often, and in the case I mentioned the bowel had sloughed.

DR. SNOW—In a certain number of cases that I had charge of in a hospital, it was the reduction of temperature that seemed to be most difficult. The vomiting would break after a day or two, and the number of discharges were diminished from seven or eight a day to two or three, but I still would have a high temperature to contend with—a temperature of 104 or 105. I think there is nothing better to relieve that than cold irrigation. I have tried sponging the skin and other things, but in a high temperature in a diarrheal disease that is continuous, I strongly recommend cold irrigation of 80 or 85 degrees, and reducing it to 70. If the child seems to collapse under the changed temperature, it might be wrapped in blankets and stimulated hypodermically.

DR. PATTERSON—I do not want to be understood as advocating sulphate magnesium as a cure for summer diarrhea in children. The only way, in my mind, to treat these cases is to remove the cause. Remove whatever is there and sterilize the food afterward. Sulphate magnesium certainly does remove the contents of and empty the bowels. As to removing the bacteria, or whatever is in the intestines, we often find children who have a large number of stools every day, and yet this does not remove the hard mass that we find in them and until you remove that mass the stools will continue. Therefore, I think anything that will remove the irritating mass will relieve the condition. You do not always get rid of the bacteria by the large number of stools.

Now, in regard to the bad taste of the drug. I do not know, excepting in two or three cases, that I have had any difficulty whatever in giving sulphate magnesium, and I am very sure that I never lost a case even among the most fastidious by reason of the bad taste of the drug. It has not any taste in particular. It is very sweet. I have given it to children who were very much opposed to taking ordinary drugs—drugs of any kind in fact—with mint water, or something of that sort, and they would take it very readily.

A word as to the reliability of dispensary statistics. As a rule, you can educate mothers up to the advantage of carefully

dieting the child. The woman that Dr. Adams came across in the dispensary must have been very heartless indeed. I have had no trouble in the cases that came under my observation to get the mother to boil the milk, by furnishing the means for sterilizing the milk, and have had good results that way. I repeat that I do not want to be understood as advocating sulphate magnesium as a cure for summer diarrhea, but advocate it as a means of putting a child in the position to get well.

HAS TUBERCULOUS COW'S MILK CAUSATIVE INFLUENCE IN TUBERCULOSIS OF INFANCY?

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY FRANK S. PARSONS, M.D.
EDITOR OF THE TIMES AND REGISTER.
PHILADELPHIA, PA.

In the discussion of this subject, two questions enter into it, upon which the etiology of tuberculosis, and the degree of danger arising from the ingestion of tuberculous cow's milk, largely depend.

1. Is tuberculosis *solely* dependent on the tubercle bacillus for its development?

2. Is the tubercle bacillus found in the milk of *all* tuberculous cows?

As to the first question, I believe, at the present day, it should be generally admitted that we must look beyond the simple introduction of the so-called germ to the system for the production of this disease and recognize a condition that is not inherent in the healthy human organism upon which the development of tuberculosis depends.

The absence of this condition precludes the possibility of infection from the germ, because of the absence of a cultivation field.

The presence of this condition establishes a reason for great apprehension in regard to the ultimate outcome of the case in which it resides.

What is this pre-tubercular condition which forms the cultivation field of the tubercle bacillus?

We must recognize that the ingestion of tubercle bacilli does not necessarily result in tuberculosis in the human organism. This fact has been proved beyond a doubt by various observers and is one which must be self-evident, inasmuch as all persons must be frequently exposed to the reception of this germ in some manner or other. Hardly an autopsy is made without the proving that some time during the life of the subject, tubercles had developed, as evidenced by the cicatricial repair of the parts. Cicatricial repair, we know, follows suppurative process and the latter is due to interference with circulation in the part involved. In other words, there has been a loss of normal correlation in the afferent and efferent blood supply.

For a more minute discussion of the influence of this loss of correlation on the production of tuberculosis, I shall be obliged, in order to prevent a great length to this paper, to refer to an article published by myself in the Philadelphia *Medical Times and Register* which runs through the first five issues of the present year, entitled a "Practical Theory and Treatment of Pulmonary Tuberculosis."

Briefly, however, I endeavored to show, in the article alluded to, that tuberculosis must be dependent on a lymphatic stasis; that said stasis arises from a backing up of waste elements in the blood at the point affected, and, that the production of excessive waste may occur from a deoxidation of blood cells, or a faulty condition of one or more of the emunctory organs, which condition may be congenital or acquired.

A stasis, if present, forms a fertile field for the cultivation of the tubercle bacillus and the breaking down of the tissue involved.

The curability of the lesion, and secondarily the disease, depends on the facility with which the normal correlation of the afferent and efferent blood supply can be restored in the parts affected, with a removal of the waste, and re-oxidation of blood cells.

If tubercle bacilli can find no lodging place in the human organism, upon which they can rest to germinate,—a state which implies perfect elimination—no deleterious effect is observed from their introduction into the system.

The fact that certain animals develop tuberculosis from the injection of bacilli, artificially, simply proves that such animals are susceptible to the irritating action of foreign bodies by a constitutional construction calculated to develop lymphatic stasis under the slightest provocation.

Thus it may be confidently assumed that the tubercle bacillus is a secondary rather than a primary causative agent of tuberculosis.

The conclusion to be reached in respect to our first question in its relation to the subject under discussion, it seems to me, must be based on the probability of the existence, or non-existence, of lymphatic stasis in the child who is fed on tuberculous milk; for instance, a child with lymphatic obstruction would undoubtedly develop tuberculosis, or the symptoms of tuberculosis so far as the tubercle bacillus determines it, if he was fed with milk in which tubercle bacilli existed; otherwise he would show no signs of such infection.

The second question in our subject depends on the existence of the tubercle bacilli in the milk of tuberculous cows, and relates to the first only as the possibility arises of susceptible children being fed on milk which contains these germs.

M. Alexandre, in a report on the subject of tuberculosis in the stables of the Department of the Seine, France, holds that the terrible mortality from tuberculosis is not the result of the consumption of milk and flesh of our domestic animals, and that this belief should be thoroughly rooted out of the minds of the profession and laity.

The danger of infecting the milk of diseased animals seems to lie in the existence of local tubercular lesion of the udder alone. If this be absent, tubercle bacilli are found wanting in the milk of cows, even though they may be suffering from tuberculosis of other parts. If no tubercle bacilli are found in the milk, there seems to be no evidence that there is any danger from the use of milk as food so far as the causation of tuberculosis is concerned.

In conclusion, it may be stated that, from the evidence obtained up to the present time, there is nothing to show that milk from tuberculous cows is infectious, except in those cases exhibiting a pre-tubercular condition corresponding to that previously indicated, presenting a favorable cultivation ground for the tubercle bacillus, and then only from the milk of such animals as have local lesions of the udder.

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SOME OF THE CAUSES OF THE GREAT MORTALITY IN INFANCY AND CHILDHOOD.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY J. A. WORK, M.D.
ELKHART, IND.

In discussing this important subject we will premise with the unquestionable proposition, viz., that in the main, physical human nature is the same the world over. Thus, conclusions derived from data from any nation, country or clime, with common environments peculiar to the subject under consideration are applicable to all. For instance, the causes that effect so great an infantile mortality in London or Paris, New York or Chicago, also exist to a greater or less degree in all large cities. The denser the massing together of human beings, the greater the multiplicity of causes of disease, and the inevitable calamitous results.

The great variety of habits and customs of a conglomerate of races and nationalities, such as in this age of rapid and cheap transit, makes it almost impossible to prevent any large city from being a fertile field for every conceivable form of disease, and the helpless infant is the easier claimed victim.

By conclusions drawn from data, necessarily incomplete, on account of the very inaccurate records, we learn that about one-half of all the deaths reported in our country, as well as elsewhere, are children under 5 years of age. If the infant comes into this physical existence a perfect being and has the proper environments, there should not be such a fearful mortality. But, alas, perfection is found in neither the infant nor its surroundings. Why is not the infant perfect physically? Answer: very few, if any parents can boast of perfect health. Thus the hereditary taint of disease, or a weakness which predisposes the infant to the numerous dangers which beset its brief life; we say brief, for the facts adduced show that one-tenth of all infants born die in the first month, one-fourth die before the first year is completed, and one-half die before the fifth year is reached. This is an alarming revelation, worthy the due consideration of Christian patriots and philanthropists. Were we to enumerate the principal causes of this dire condition, the low ebb of human vitality, we would thus record them: 1, heredity; 2, inexperience; 3, ignorance on the part of all concerned in the production and care of the infant; 4, zymotic diseases; 5, want of natural affection on the part of parents.

This list, we believe, comprises the principal causes, but probably not all; and some of these may to some individuals seem far-fetched or remote from the subject. But let us first consider heredity. The stubborn facts gleaned from observation and research will not allow us to conclude other than that myriads of infants die of hereditary taint, to say nothing of the myriads that would be born and live, were it not for this blight. Diseases transmissible are not conducive to longevity, but, on the contrary, they so violate the constitution that, if gestation is completed at all, the child by virtue of the hereditary blight can but eke out a miserable existence. This is true of all constitutional diseases, more or less. This is true to a greater degree where successive generations have been affected with any hereditary taint.

Truly, "the iniquities of the fathers are visited upon the children, unto the third and fourth generations," and in a less degree where a parent with former vigorous constitution acquires the disease just prior to conception, or the hereditary effect upon the offspring may be a lack of physical development of one or more vital organs, or a weakness of the whole system without any special diseased part. Infants hereditarily affected do not all die, consequently the mortality in the succeeding generations from this too large class of diseased but often physically active beings. Sixty per cent. of the mortality of children of healthy parentage could be prevented, were it not for the inexperience so prevalent with the class who do not oppose reproduction.

Many parents do not even have the instinct as to feeding their young that the lower order of animals have. They do not seem to know that the infant, as a rule, brings its natural life and health-sustaining food with it, but are ready to feed it all manner of food which manufacturers have been actuated to invent from whatever motive. They know the child's stomach only as a receptacle, and are slow to learn that any food will harm the digestive apparatus, because they (the parents, or perchance the grandmother) are fond of such food. I have known well-meaning mothers to feed their babies mince pie, fried potatoes, all kinds of fruits, meats, nuts and *all* before the child had a sign of a tooth. And when the almost universal rational artificial food (cow's milk) has to be given, such kindness is bestowed that the child gets all that it wants and whenever it wants it, regardless of the impaired condition of the digestive organs. Often food is given where drink, only, is necessarily required by the fretting child. In many instances if not death, irreparable injury is produced by urging children to fill or gorge their stomachs with fresh food, while a large portion of the former meal in a decomposed condition remains. The result of a continuation of this very common habit is obvious to the pathologist.

Too little attention is given to proper clothing during infancy and childhood. Whether asleep or awake, there are always at least two indications to be observed, viz., the clothing should be of a texture to produce uniform warmth, and should be made to produce uniform pressure on all parts of the clothed surface. I have known mothers or nurses to take the babe from a warm bed of blankets and hold it in a cool atmosphere without wraps as warm as the bedding was. Many infants sleep with their parents or nurse, and are compelled to breathe the noxious exhalations of their bodies. Not a few are smothered by this unhealthful habit, and take their place in the vital statistician's list of "accidental."

I once knew a fashionable young mother to begin with the first swaddling band to lace her infant daughter, stating that she desired the child to have a "good form." Alas, before the first anniversary of birth was reached, she had gone to swell the list of deaths by "developmental diseases."

There *is* a factor which increases the mortality list of children to an alarming degree, which we have reasonable hope ere long, by the aid of the microscope and other inventions in the hands of the scientific investigator, to reduce to the minimum, and take its place as the least to be dreaded of all the causes of death. I refer to the zymotic diseases that play such havoc at times among our promising rising generation, blighting fond expectations.

Sanitation has done more, is doing more, and it is likely will do more to eradicate or at least modify, this dreadful class of causes of death, than can be reasonably expected in relation to other causes mentioned.

Early effective elimination as advocated before this Section two years ago, in all the diseases belonging to this class, will rob it of many of its victims and thus materially reduce the mortality list. (Please pardon this digression from *cause* to *cure*.)

The last cause we will mention is the lack of "natural affection." The divinely inspired apostle to the Gentiles, in writing to his son in the faith (Timothy) thus declaims that in the last days perilous times shall come; and "without natural affection" is one of the morally degenerating symptoms, and we believe it also to have, as well, a physical degenerating effect. How many, not *would-be* but *could-be* mothers, manifest more affection for a pug or poodle than for their own offspring? We ask a question that the observing practitioner may answer according to his own experience as a family physician. What proportion of all children born are welcome or were wanted prior to conception? If I am left to answer, I will venture the assertion that not more than one-third. This may be too low a guess. Then think of a mother in constant rebellion during the whole time of gestation, and the effect physically, as well as morally, on the begotten, and if an effect on this, what of the next and successive generations? How many of the unwanted babies are neglected, even unto death, by the thus vicious who give their children the endearing appellation of "kids?" How many mothers in fashionable circles say that they do not want their liberties infringed upon, will not nurse their babes, and thus give them only a chance for their lives? How many carelessly prepare the food for, and as carelessly feed the little helplsss creatures? How many desert their progeny? The foundling homes so mercifully provided in many of our large cities do witness of this shame, of the lack of natural affection. Infant insurance will find a hearty support in this class of misanthropists.

Much more could be said by way of pointing to the causes of the alarming mortality of infants, but we will content ourselves if enough has been said to elicit a proper sense of the responsibility we should feel in our chosen profession. May we prove ourselves not only worthy the name Physician, but Philanthropist as well.

300 Division Street.

HEREDITY AND ITS ENVIRONMENTS.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY J. E. RIGG, M.D.

WILKINSBURG, PA.

When a child is born we may well ask what heritage it brings, from whence did it come, and what influences in the history of its ancestors would modify its condition to resist the evil influences which will surround it through life?

The late Dr. Holmes said, "that if we would properly educate a child we must begin 300 years before its birth." If this be true with reference to education, is it not much more true with reference to a healthy and perfect organism being given to the child, that it may be the better able to resist diseased influences and unhealthy surroundings.

The most important predisposing causes of disease are those connected with the structure of the body, having individual peculiarities, which may be inherited or may be congenital. In most of the so-called hereditary diseases, that which is transmitted from parent to child is not the disease itself, nor its direct specific cause, but some peculiarity of structure of tissue or organs which, in the course of development either make the person peculiarly susceptible to diseased action from without, or produce disorders itself by defect of structure or function of some particular part.

A person is said to possess immunity as regards a certain disease when he is but slowly, or not at all, affected by the causes of that disease when brought into contact with it. Immunity may be natural or artificial, partial or complete. Natural immunity may be hereditary, as for example, the insusceptibility of the negro to malaria and yellow fever. Artificial or acquired immunity may be produced by the action of the disease itself, as in smallpox, scarlet fever, measles, whooping cough, etc., and also from smallpox by the proper vaccination with the kinepox lymph. Precisely how this immunity is produced we do not know, but it is probably due to the presence of certain albuminoid substances which have the power of killing or weakening the pathogenic microörganisms or neutralizing their toxic products. Immunity is rarely absolute and complete.

It has been asserted that children born of syphilitic parents are protected against syphilis.

Experiments on animals and observations on human beings have shown conclusively that infectious agents may pass from the mother to the fetus through the placenta, as has been observed in smallpox, measles, scarlatina, relapsing fever and syphilis.

It is asserted by Baumgarten that the tubercle bacilli may be transmitted in this manner. This view is not, however, generally held. The generally accepted views are that the condition or predisposition to the subsequent development of tuberculosis is inherited. This condition, Formad asserted to have been particularly marked in children with narrow lymph spaces.

It has been claimed that heredity plays an important part in the etiology of aneurysm, chlorosis, diabetes, emphysema, goitre, gout, rheumatism and rickets.

There can be no question but what the condition of the parents has something to do with the health and strength of the child, which receives its start in life from their union. Lead poisoning on the part of the father is thought to lessen the vital force of the offspring.

Dr. Hirst has stated that out of thirty-nine pregnancies in women whose husbands were sufferers from chronic lead poisoning, eleven ended in abortion, one ended in stillbirth and only nine survived early infancy.

The influence of syphilis in the parent on the fetus, and subsequently on the child, is too well known by this body of scientific men to require any argument.

Drunkenness also plays an important part in the health of the future generation. A man may claim that he has drank whisky all his life and is yet in a good state of preservation. Such may be the case, but to see the full effect of his habit, look at his chil-

dren, and we find that they will not compare favorably with those whose parents have not been given to strong drink.

In the hospital for children at Berne, Switzerland, it was found that only 45 per cent. of children born of intemperate parents enjoyed good constitutions, while 82 per cent. of those born of temperate parents enjoyed that blessing.

The union of two persons of the same temperament often results in children with unbalanced constitutions. That is, that particular temperament leads so strongly, that the child is overdeveloped in that particular line and does not reach the standard in others. The result is a diseased constitution. Also the union between certain nationalities seem to have in some instances an unhealthy effect. Same facts bearing on this were found by the writer while collecting statistics in Westmoreland County, Pennsylvania, in 1884. It was found in one part of that county that the early settlers had been Swedes, who were a healthy thrifty class. Near by was a community settled shortly after by the Irish, who also had a good family record. Tuberculosis was not known in either settlement. Later, perhaps in the third generation, they mingled together and a number of marriages occurred. In each case tuberculosis was found in some of its forms. A close inquiry failed to trace it back on either side. Those who married among descendants of other nations were not so afflicted.

The manner of living may have much to do with the proper nutrition of the growing cells. One instance will serve to illustrate this point. A father and mother of very good family history lived in a stone house built on a hillside, the first floor being partly under ground, and this was the part mainly used by the family. In this house they raised their family consisting of seven children. Four died before the age of 25 of tuberculosis, one at about 35 and one at 45 of the same trouble, one only living to die of cancer at the age of 50 years.

For at least three generations back the family history was good. On the one side they were of Irish descent; on the other side, I could not learn of what nation they had come.

The mental condition of the maternal parent must produce some impression on the child. How, we do not know, as so far there is no direct connection between the nervous system of the mother and the fetus, but the facts stand well established that there is some unknown force, the influence of which must be recognized. The case of Jesse Pomeroy stands not alone in support of this theory. The sieges of Lucknow and of Landau furnish additional proof of this.

As a chain is strong only at its weakest point, so we are only strong at our weakest cell.

Anything that will cause cell life to be at a low standard will, in some way or other, so weaken our forces that we will be less able to resist the influence of disease, as well as retard our growth and give us a body which will be beneath that of our neighbor who was brought into the world under less unfavorable circumstances. We must not stop when the child is born, for there are many influences which will change for better or worse the power of resistance and vital force of the physical organism of the infant with which it will have to contend in its march through life. These are most usually found in the diet which it receives and the care with which it is guarded from colds and exposure and the care that is exercised in giving it good air and plenty of sunshine.

As to heredity, it is important that each parent should exercise great care to see that they are free from any taint of disease, either inherited or acquired, and that they are not overworked physically or mentally. As to the liability of overwork physically, that is not so likely, but from a mental standpoint the reverse is true. In this age of rush and push among our American people, there is great danger of the nervous system being so exhausted by the strain of business and the desire for place that there is no power left to give vital force to the germs that are to develop into the future being.

It is the writer's belief that were it not for the introduction into our race of the slower and less nervous class that we would degenerate more rapidly than we do. This may be putting it strongly, to imply that we are in a state of degeneration, but it is surely true that we are living at too fast a pace and the laws of self-exhaustion will in time weaken and impair us to such an extent that we will no longer be able to hold our place as a nation and people.

Is it not time, then, to give the alarm? And from where is this warning to come if not from the physician? Let us give timely advice to those who intrust their health and lives in our hands. Let us not fail to look to their future good as well as their present protection. Take, for instance, a child that is born of parents who have exhausted their vital powers in their pursuit after wealth and society. Their child is given, as a heritage, a highly developed nervous system. It is raised on the bottle and its care is given to a nurse who has neither knowledge or judgment to guide her. She seeks her own comfort and not the health of the child; she allows it to be in drafts, to remain in damp clothes, to have its food whether fresh or stale. The child will suffer first from cold, then from excessive heat. What is the result? Bronchial troubles develop and carry off many, the stomach and bowels become diseased and the child lingers between life and death for a season and then slowly recovers. What is the effect of this prolonged perversion of cell nutrition? It must be to weaken the cell life of each and every cell of which the body is composed. Suppose this child be a girl. She is placed in school at an early age and is expected to accomplish by the time she is 18 as much as ought to be expected at 24; but she must be through school and enter society at 18 or, at most, 20, and what is her condition? Alas, too often so broken in health that she can only attend to her social duty and then under the stimulating lash of social rivalry. Yet she is expected to marry in a short time and give strength, force and character to her offspring, none of which she herself possesses.

How, then, are we to protect our children from the evil influences from which they suffer and for which they are in no way responsible? By prohibiting improper marriages, by teaching the proper care of the body on the part of both parents, and by limiting the amount of nerve force expended by them during the period in which their children are conceived and brought forth; by the proper care of the infant in regard to its food, clothing, rest, fresh air and clear sunshine; by guarding it from extremes of temperature, protecting it from drafts and in every way keeping it in a regular line of life, and when it comes to the proper age to go to school, to see to it that the building is well ventilated without pushing up the

windows at the back of the child that air may rush in and chill the little frame already weakened by bad air and too close application to its books. Then, as it grows older, especially if it be a girl, say 13 years of age, let the next two years be spent in the development of the body rather than forcing the mental training, as at this age the system needs all the nervous force and vital energy to establish the normal functions of the body. We should also place our public schools under the care of intelligent and careful men and women who are competent to care for the body and mind.

BROMOFORM IN PERTUSSIS.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY P. J. EATON, A.M., M.D. (HARV.)
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I wish to bring to your attention the results of some studies I have recently made upon bromoform; its chemistry, pharmacology, and therapeutic action in certain diseases.

Bromoform is a colorless liquid of sp. gr. 2.83 at 0 degrees C., and is represented by the symbol C H Br. 3. It is produced by the action of bromin upon alcohol in the presence of an alkali. In practice, milk of lime is saturated with bromin, alcohol is added, and the mixture distilled. The resulting liquid is colorless, sweet to the taste, and gives the sensation of burning. Its physiology may be summed up in saying that it is an agreeable anesthetic, without danger, merely lowering blood pressure; a narcotic when used hypodermically; and, finally, is an antipyretic. The excitability of the psychomotor centers and the general reflexes are entirely abolished when anesthesia is complete. The urine contains bromin some hours later.

In leading up to the discussion of the value of bromoform in pertussis and certain other forms of spasmodic cough, and in referring to the methods of administration, and manner of its exhibition, I shall report briefly some cases in which the drug was used, and from these cases hope to deduce some points of interest:

Cases 1 and 2.—Father and son. Middle-aged, and 6 years old respectively. Came to me Nov. 12, 1893, with the history of having had whooping cough since spring. They had tried many doctors and much medicine with no benefit. Both pale, and pretty well worn out. Gave bromoform in appropriate doses, and in ten days patients both reported themselves well.

Case 3.—Boy fifteen months of age. Began to whoop July 25, 1894. Had not been very well for some time, having had some intestinal indigestion. Began bromoform at once, drops 2 to 3, four times a day. On the third day he was stupid, temperature 101.3 degrees, anorexia-malaise. Reduced the dose of bromoform for a day or two to 1 drop, occasionally omitting a dose. Then increased it, as cough was rapidly growing worse. He then took 6 drops without any bad symptoms. By the middle of August he had stopped whooping, and on August 29, I have record of very rapid improvement. He has had one bad cold since, during which he whooped a few times. He is now, Nov. 26, 1894, in robust health.

Case 4.—Spring of 1894; boy 3 years of age. Mild case. Bromoform given early. In seven or eight days ceased whooping. Coughed some time longer. During the summer he had one or two colds, and would give a mild whoop occasionally. General health suffered very little.

Cases 5 and 6.—Brother and sister, 8 and 10 years of age; summer of 1894; both took bromoform well, the boy recovering in ten days; the girl in two weeks. The boy had a light attack; the girl a pretty severe one. Both had whooped a week before having any treatment.

Case 7.—Middle-aged gentleman; summer of 1894. He had had pertussis when a child. He is father of Cases 8 and 9. Took rapidly increasing doses up to 30 drops with relief, but not complete cure. He was very much racked by the paroxysms. A sea trip from Boston to Baltimore, and continuance of the drug cured him within a week. Coughed in all, three weeks.

Cases 8 and 9.—Four-year-old girl and 1-year-old baby. Bad cases. The older child would not take the medicine well and was only relieved. The baby was taken to sea, and greatly benefited. Bromoform was not pushed to physiologic limits in either case.

Case 10.—Summer of 1893; girl 4 years of age. Mother would not give medicine regularly, and child did not improve. She coughed all summer.

Case 11.—1892; boy 3 years old. He whooped for a week or two before beginning treatment. Was seen twice at intervals of three days. Marked improvement. One day at about 1 P.M., his mother discovered the bottle of bromoform which had contained 1 drachm, about half empty. The boy denied having taken any. He was brought to my office about 2:15 P.M. I could smell no bromoform in his breath, and he was as bright as usual. About 6 P.M. I was summoned by telephone and found on my arrival, that the boy in running to meet his father about 5:50 P.M., had suddenly grown very sleepy and stupid, and soon had become comatose. Hypodermics of ether and whisky and hot enemata were given for flagging pulse. Friction to cold extremities was used, and pricking and slapping to keep patient awake. In an hour he was out of danger. Slept heavily during the night, and the following day was as well as usual. No more bromoform was given, but the attack passed away very soon.

Case 12.—Summer of 1893; boy 8 years old. Had been whooping hard for three weeks and was pretty well used up. Made out a schedule for a week's treatment. I did not see the boy again, but met his mother on the street ten days afterward. She said she had not brought the boy to the office as requested, because he had ceased whooping at the end of five days, and was perfectly well at the time of our interview.

Case 13.—1893; girl about 5 years of age. Gave bromoform in increasing doses up to 17 drops with relief, but no very marked or prompt cure. I did not dare to give any larger doses. The attack lasted about four weeks. A sister two years older was greatly benefited by the drug, and was well long before Case 13. Her maximum was 11 drops. Both children were singularly quiet and deliberate in their actions and very phlegmatic.

Case 14.—June 3, 1894; male, eighteen months of age. Coughed for several days. Dose, 2 up to 4 drops. A mild attack. Well in a few days.

Case 15.—June 3, 1894; female 3 years of age. Coughed for several days. Dose, 3 up to 6 drops. Moderate attack. Began to diminish dose June 17, 1894. Was well in two weeks.

Case 16.—June 12, 1894; female 25 years of age. Was sick several weeks. Dose, 6 up to 18 drops. Stopped whooping on June 22. Slowly diminished the medicine.

Case 17.—June 12, 1894; female 2 years of age. Was sick several weeks. Dose, 2 up to 4 drops. Moderate attack. On 23d was well of cough.

Case 18.—Dec. 11, 1893; female sixteen months old. Was sick two weeks. Dose, 2 up to 4 drops. Mild attack. On December 23 was well.

Case 19.—Sept. 6, 1893; female 26 years of age. Coughed for a week or two. Dose, 6 up to 20 drops. Very severe attack. By 16th much better; on 19th only one whoop. Then diminished bromoform.

Case 20.—Sept. 6, 1893; male 3 years of age. Coughed for a week or two. Dose, 3 up to 6 drops. A moderate attack. Was well in ten days, except little loose cough.

Case 21.—Spring of 1894; male 8 years of age. Had cough and cold for a few days. Dose, 4 up to 9 drops. Had rather severe attack. Was well in three weeks.

Case 22.—Spring of 1894; female 5 years of age. Had cough and cold for a few days. Dose, 3 up to 7 drops. Mild attack. Was well in two weeks.

Case 23.—Spring of 1894; female 6 years old. Onset rather abrupt. Dose, 4 up to 7 drops. Mild attack. Was well in ten days.

Case 24.—Spring of 1894; female 3 years of age. Had catarrhal cold for a week. Dose, 3 up to 5 drops. Mild attack. Was well in twelve days.

Case 25.—November, 1894; female 6 years of age. Whooped three weeks before treatment. Dose, 4 up to 9 drops. Severe attack. Well in two weeks.

Case 26.—November, 1894; female 4 years of age. Had

whooped three weeks. Dose, 3 up to 12 drops. Very severe attack. Was well in three weeks, and grew rapidly very fat.

Case 27.—November, 1894; female 2 years old. Whooped for ten days. Dose, 3 up to 5 drops. Severe attack. Well in three weeks.

Case 28.—November, 1894; male 2½ years of age. Dose, 2 up to 4 drops. Mild attack. On the fifth day caught cold. Temperature 104 degrees. Dull, stupid, languid. I stopped bromoform and gave aconite and belladonna. In two days resumed bromoform. Now, whooping about once in two days and sleeping and eating well, and coughing much less.

Case 29.—Exposed Oct. 22, 1894; boy eight months old. Coughed from the 26th to the 28th quite violently, and on the evening of the 28th whooped from twenty to thirty times—typically. I gave 2 drops of bromoform at 8 P.M., and at 1 A.M. Temperature normal, pulse 120. Did not whoop after 11 P.M. until the next day at 7 A.M., two whoops; 7:30, 2 drops of bromoform. Temperature and pulse normal. At noon, 3 drops bromoform; at 4 P.M. 2 drops. One whoop at 1 P.M.; 6 P.M., temperature 99.4 degrees, pulse 120, good. Much swallowed mucus in stool to-day. Dull and sick—that night whooped once. Slept well.

October 30. No whooping to-day. Cough loose and very moderate. Gave 5 drops of bromoform during the day. Evening temperature 99.2 degrees, pulse 120.

October 31, slept well. Bright as usual. Coughed several times—no whoop—ate well. Temperature and pulse normal.

November 1. Gave 1 drop of bromoform four times to-day. No whoops.

November 15, an occasional cough. No more whoops.

Shortly after last record, baby caught cold and coughed several times a day. No whoops. Has gained steadily since.

My plan of administration is based on the following idea: begin with a dose which can be well borne, increase as rapidly as is compatible with safety up to the maximum dose, *i. e.*, that dose which distinctly diminishes the number and violence of the whoops. As the number of paroxysms decidedly lessens, and when the patient sleeps all night, I begin to diminish the dose by drops. I give it four times a day as a rule, but in severe cases add an extra dose in the middle of the night. I see the patients frequently, and keep close watch on the *condition of lungs, bronchi and heart.* I have always exhibited bromoform in its pure state, writing for a given quantity of the drug and ordering it to be put up in a dropping bottle, and to be given in a little water; this I do because it can not be easily dropped in any other way. If you bear in mind the high sp. gr., you will understand why it is difficult to drop, and you will not be surprised to know that there are in the neighborhood of 360 drops in one drachm.

Mr. Geo. W. Hackney, Ph. G., of Pittsburg, has made, at my instance, many experiments looking toward some other and more agreeable method of giving this drug. His work seems to show that emulsions are not palatable; that mixtures are not safe; and that the best way, outside of my own way of giving it in water, is in a mixture of alcohol, glycerin and water.

The first requisite seems unattainable, each mixture or solution seeming to markedly retain the sweet pungent taste of the drug. The second requisite, that of safety, obtains only in absolute solutions—alcohols of various strengths.

I have made it a practice to repeatedly examine the heart and lungs of all cases, and the record has been here omitted only to insure brevity. In no case under observation was there any heart lesion developed, nor was there any moist râles, except in two cases. These cases differed in severity, but Cases 16, 19, 21, 25, 26 were certainly very severe. Case 26, for example, having, previous to treatment, lost her breakfast eight times in one morning.

Since I wrote the body of this paper, Dr. W. W. Johnston, of Washington, has, in the *Archives of Pediatrics* (April, 1895), called our attention to the great mortality in pertussis. His essay deals with the shadowy side, and we are indebted to him for his exhaustive comparisons and mathematical data. He deals with things as they *are* and *have been*, and not as they *may* be. I do not want to precipitate a discussion on pertussis as a disease, but only to call to your attention the fact that in the use of bromoform we have a method of controlling this disease and avoiding the great mortality which surely does obtain.

There is another class of cases to which I wish briefly to refer, in which bromoform seems to accomplish something unattainable in any other way. I refer to those bronchial subacute colds in adults, in which a very hard, persistent, dry cough obtains, and which seem to resist the drugs ordinarily given for their amelioration. In such cases I have found bromoform to work most effectively; in a very short time reducing the frequency of the cough, causing a moderately free expectoration, and consequently relieving the muscular distress of the patient. To such cases I give the drug in capsule (letting the patient fill the capsule) in doses ranging from 20 to 30 drops every six hours.

The danger signal is usually plainly to be seen; drowsiness following the exhibition of an overdose, usually in course of an hour or two.

In conclusion, let me again lay stress on my method of giving this drug, viz.: begin with a known safe dose, then push to the limit of evident relief of symptoms as rapidly as possible. In this way we may expect to avoid many of the complications and save much time in the treatment of this disease—as well as markedly reduce the mortality.

DOUBLE CLUB FEET AND HANDS—TREATMENT.

Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY B. MERRILL RICKETTS, M.D.
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The object of presenting this subject and report of a case is to place one of the rarest affections on record, and to draw from its history and treatment any deductions that may be of profit.

It is to be regretted that so little has been accomplished, especially in rendering the club hands more useful.

Unfortunately, the causes do not lie within the domain of surgery—they being manifested in utero.

Whatever the cause may be, the results are practically the same; if it is due to a neurosis, but little can be hoped for in increasing the usefulness of the affected extremity.

If, however, the nerves should not be affected, and the deformity due to an over- or under-developed bone, the greatest benefit usually ensues from some surgical procedure.

There is a condition found in the congenital paralysis of the extensors of the forearm which does not exist in the congenital paralysis of the extensors of the lower leg, viz., the ankylosis of the elbow joint. This seems invariably the case.

I have not thus far been able to find any report of ankylosis of the knee joint in paralyses of this nature.

On the other hand, the joint motion of the knee is nearly always perfect; this may be accounted for by there being but one movement in the knee—the backward and forward one; we have beside this motion in the elbow, a rotary motion which renders the hand capable of abduction and adduction.

These two movements are greatly lessened when the hand is flexed to the extreme, as in case of club hand. This prolonged flexion in utero results in ankylosis, and the arms having less strength than the legs are more likely to remain quiescent.

The arms are drawn forward, giving a narrow appearance to the chest, but the shoulder movement is usually good.

Some if not all of the carpal bones are always changed in their shape as the result of prolonged affliction at a time when they are very soft and easily molded. There may also be one or more absent.

The second finger is usually very much flexed and overlapped by the index and third fingers. The thumb is drawn across the palm and pain is experienced when it is brought into a normal position.

Male, age 10 weeks, well nourished. Has four healthy brothers and sisters; congenital. Extensors do not respond to either faradism or galvanism, interrupted or straight. Multiple neuritis of tibial and radial nerves. Cut both tendo-Achilles and tendon and plantar fasciæ of both feet. Applied plaster-of-Paris massage, etc.; great improvement.

Multiple neuritis of the nerves supplying the affected muscles is usually found, but just what produces multiple neuritis remains a question. In the case I present for your consideration, no cause can be assigned.

The child, a male, white, was ten weeks old at the time that I first saw it, Jan. 10, 1894, when it was placed in my private hospital for observation. A consultation with Dr. Phillip Zenner resulted in finding the subject well nourished, and the youngest of five healthy children. The extensor muscles did not respond to either faradism or galvanism, interrupted or straight current. It was found that there were multiple neurites of the tibial and radial nerves. The bones of the two upper extremities and the left lower, including the tarsal and metatarsal, carpal and metacarpal, seemed to be normal in shape and number; also the bones of the right leg and foot, except the phalanges. All of the toes of the right foot were imperfectly developed, while the tarsal and metatarsal bones seemed, as far as could be determined, as perfectly developed as those of the left foot. There was, however, a slight curvature of the right tibia, and the talipes was of a higher degree. Massage and light brass splints of my own construction were applied to the foot. These were kept on for fifteen or twenty days at intervals of three or four days each; during these intervals vigorous massage was applied; each tendo-Achilles was divided, after which the normal condition was more nearly reached. During this time, the mother was taught to extend the hands and massage freely. The fingers were extended separately and collectively, and I must say that during the three weeks of treatment the improvement was much more than I had expected.

The mother returned to her home after the third week and continued the treatment under the direction of Dr. E. S. Buffington.

About May 20, 1894, I again divided both the tendons and plantar fasciæ of each foot, which enabled them to be placed in a better condition than on any previous occasion.

The extremities were bandaged with plaster-of-Paris, which was allowed to remain for ten days, at the end of which time it was found that the position of each foot had been greatly improved.

The mother continues massage of the feet and hands, and the patient gradually secures better use of them.

DISCUSSION.

Dr. Manley, of New York—This is a matter which must command particular attention on the part of those whose specialty is dealing with the diseases and deformities peculiar to very early life, and in connection with the subject which the Doctor has presented, the question arises, and upon which I hope the members here who have had experience in that class of cases will express themselves, as to whether it is the proper thing at an early stage in life, before the child is weaned and before it has begun to walk, to endeavor at once to radically overcome those deformities, or whether it is better to treat them by a gradual process of manipulation with appliances which will overcome the tendency to those spasmodic inclinations, and try to attain the end in view by massage and electricity.

I must say that so far as my own experience goes, particularly in these cases of talipes varus, by a division of the tendo-Achilles, not only the correction, but hyper-correction of the ankle of the foot, to keep the limb in that form until the spasmodic tendency is overcome, is usually done early. I do not gather that in this case there was any history of heredity as to deformities in any of the ancestors of the child. I simply wish to say that the deformity of the hands produced by action of the same or analogous set of muscles as in the legs, is quite unusual, and I think gentlemen here are interested in seeing the extent of correction the Doctor has effected in this very interesting case.

Dr. Ricketts—I am thoroughly convinced that the best means sometimes are the most radical, and that the best results are obtained only by the most radical means. In this case, as in many cases of club feet and bow legs, I believe in a child it is best to put it in a condition whereby it can get upon its feet as soon as possible. That is why we have better results in this condition of the feet than we do in the hands. If we could go back to the period when we were quadrupeds, and put the weight on the hands that we do on the feet, there would be no reason why the hands should not improve in the same degree as the feet. The question comes up in this case as to what is the best way of treatment. The feet are improving rapidly, the hands are improving also, but as I stated in the paper, the improvement in the hands is much less than the improvement in the feet, for the reason, perhaps, that the weight of the body adds materially to the good influences in correcting the deformity of the feet. This is the sixth case, I believe, that has been reported in this country, so far as I can ascertain. Dr. Reginald, about two years ago, reported five cases of this character, and I have since learned that this is about the sixth case reported thus far in American literature.

PELVIC DISEASE IN WOMEN, AND INSANITY.

Read at the Fifty-first Annual Meeting of the American Medico-Psychological Association, at Denver, Colo., June 13, 1895.

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At the meeting of this Association in 1892, I reported, briefly, the results of my experience in operating upon a small number of insane women suffering at the same time from disease of the pelvic organs. This report was afterward supplemented by more extended and specialized papers read before the AMERICAN MEDICAL ASSOCIATION, and the American Association of Obstetricians and Gynecologists. The work has attracted some attention, and has given occasion for favorable comment and unfavorable criticism. In one instance, a laudable endeavor at imitation was rudely suppressed by the official interference of a State Commission in Lunacy whose *obiter dictum*, that operations upon the insane were "brutal and inhuman, and not excusable on any reasonable ground," as well as "illegal and unjustifiable," received the indorsement of some of the most distinguished members of this Association.

Whether the opposition to the work referred to, can be justified upon medical and surgical grounds, I shall examine later on. For the moment, I desire to invite your attention to the legal aspect of the matter, for if the assertion of the Pennsylvania Committee in Lunacy, that a surgical operation upon a lunatic is in all cases "illegal and unjustifiable," is correct, the sooner physicians and surgeons in attendance upon the insane know it, the better for themselves, although it might not be to the advantage of their patients.

I have devoted a good deal of time and attention to the investigation of this point. In the first place, it was desirable to ascertain what, if any, specific legislation bearing upon this matter existed. My own reading, as well as the experience of several eminent lawyers consulted, failed to disclose any statutory enactment governing the authority of a medical attendant to decide upon the necessity of a surgical operation upon a lunatic.

A priori, a surgeon acting in good faith, and for the benefit of his patient, might therefore perform an operation upon a lunatic without committing specifically, an act contrary to law. Of course it is a general principle of law, and this has found expression in specific enactments, that no one can *in invitum* be even touched by another. And this is held to prohibit the performance of a surgical operation upon a person without his consent. Decisions declaring an operation illegal if the consent of the patient has not previously been obtained are upon record. On the other hand, courts have generally held that this principle is not applicable where it could be shown that the operation was performed for the benefit of the patient.

So far as this legal principle has a bearing upon the performance of surgical operations upon insane persons, it is manifestly confined to the question of what constitutes valid consent. It has been held that a lunatic can not give such consent, and that no other person can give consent for the lunatic. On the other hand, the opinion is held that under certain circumstances, the insane individual is competent to consent to a surgical operation, and that the power to do so may likewise be delegated by a court of equity to the committee of the lunatic. The latter opinion is manifestly the more reasonable one.

The following propositions may be accepted as based upon the principles of law and judicial decisions governing the question of consent by a lunatic to the performance of a surgical operation:

1. The act of a lunatic, during a sane interval, has in law the validity of a sane person; therefore a lunatic, in a sane or lucid interval, is as competent to consent to a surgical operation of any kind as is any person.

2. The State, acting through courts of equity, is the guardian of all insane persons. The equity court appoints a committee as its agent for the discharge of this duty. Such committee is the legal guardian of the person and has the power to consent to such measures as may be for the lunatic's benefit. The committee of a lunatic has, therefore, the power to give consent for the performance of an operation upon the lunatic, if it should be for the latter's benefit.

3. The lunatic may, even if there is no absolutely lucid interval, be competent to give consent to the performance of an operation, if he understands its object and consequences. It is the central principle of the modern law of insanity that the validity of any act of a lunatic depends upon his capacity to perform the particular act in question. Thus it has been decided that a lunatic is capable of being a witness, although not capable of entering into a contract. The law would probably not exact so high a capacity in a lunatic to consent to a surgical operation as it would to enter into a contract. In these cases, however, the physician or surgeon must assume the responsibility of determining whether the lunatic has that degree of capacity requisite to consent. Manifestly, the surgeon is here placed in a delicate position, but one from which, in emergencies, he has no right to shrink. In all cases of doubt, where practicable, the authority of the equity court or of the properly appointed committee should be obtained. The law therefore, so far as it is applicable here, indicates the nature and sources of consent to a surgical operation in an insane person. The further question whether certain methods of treatment are justified—in other words, whether they are necessary or are for the benefit of the insane person remains to be considered.

Every one will agree that any person suffering from a local disease should receive treatment for that disease, irrespective of whether the person is sane or insane. Thus patients with acute infectious or inflammatory disease, disorders of digestion, affections of the heart, lungs, kidneys, surgical diseases, etc., would all receive appropriate treatment for the local morbid condition in all properly conducted insane hospitals. It has become customary in many institutions for the insane, to subject all patients on admission, or soon thereafter, to a physical examination. In this way it has been discovered that a considerable proportion of insane persons suffer from gastro-intestinal disorders, tuberculosis, heart affections, kidney diseases, etc. There seems however, still a widespread prejudice against examining the pelvic organs of insane women to determine the presence or absence of local diseases in the genital organs and pelvic viscera. The failure to make such examination, systematically, is doubtless responsible for the opinion current among asylum physicians,

that pelvic disease is rare among female lunatics. I have been told by asylum physicians in this country and abroad, that pelvic disease must be rare among their female patients, because so few of these complain of symptoms referable to the genital sphere. Might I ask, how many cases of cardiac disease would be discovered if the physician waited for the patients to complain of disordered action of the heart, or of the kidneys? Has it not occurred to some of those here present to find an over-distended bladder in a male patient when no complaint of local pain or discomfort had been made? I venture to say that systematic examination of the pelvic organs by one familiar with modern methods of examination would disclose a large proportion of pelvic disease among female lunatics. My own examinations in the Maryland Hospital have shown that fully 60 per cent. of the women admitted have some lesion of the genital organs or pelvic viscera. Many of these are of so slight a character as to require no treatment, but others can only be relieved by some form of operative interference. Thus, of the affections I have frequently found, are rupture of the perineum, abscesses, cysts of the vulvo-vaginal gland, lacerated cervix uteri, catarrhal and purulent endometritis (usually following puerperal septic conditions) cancer of the uterus, fibroid tumors of the uterus, salpingitis and ovaritis, pyosalpinx and ovarian abscess, cysts of the ovaries and of the broad ligament, and pelvic peritonitis. Defective development of the external genitals has often been found in that class rather vaguely termed "degenerates." In a certain proportion of cases the diagnosis of masturbation can also be made with certainty by the physical examination.

The objection that a vaginal examination directs the attention of the insane patient particularly to the sexual organs, and in this way has a bad moral effect has, according to my observation, no validity. Most patients can readily be examined without an anesthetic, although in some the examination can be more satisfactorily made under anesthesia. Only once in upward of one hundred examinations did the vaginal examination produce an orgasm. This patient was suspected of masturbation, although she had never been detected in the act. The examination disclosed the elongated nymphæ so characteristic of the constant practice of this vice.

If it is true that pelvic disease is prevalent among insane women (an assertion easily confirmed or refuted by further observation) the question arises, Has the pelvic disease any etiologic relation to the mental disturbance? Upon this point, much more extended clinical observation is desirable. I incline to the belief that there is such an etiologic relation. But my experience is as yet too limited to establish this opinion as an axiom. The personal equation which governs every observer's work has not yet been determined. Others, with the same material might arrive at different conclusions. But no one has a right to deny the accuracy of my observations, or the validity of my inferences, unless upon a similar basis of personal experience. I refuse to recognize the authority of any critic "up a tree." He must come down from his perch and meet facts with facts. Arguments based upon prejudices will not answer.

I have expressed my belief in the causative relation of pelvic disease to insanity in women. The mere coëxistence of pelvic disease and insanity in women does not establish such a relationship. The cure of the mental disturbance by removing the physical disease, would generally be accepted as a sufficient test. Unfortunately, a cure of the mental derangement does not always follow removal of the local disease. A little reflection will show that there are abundant reasons for this. The brain organization may have already been so much deteriorated by the persistent reflex irritation from the local disease, that local *restitutio in integrum* fails to restore the normal functioning power of the cerebrum. The habit of morbid action of the brain may have been so strongly impressed upon that organ that the original cause of the derangement is no longer necessary to keep it up.

As a contribution to the clinical material upon which eventually any satisfactory conclusion must rest, I shall report in brief my experience during the past four years in the Maryland Hospital for the Insane.

One hundred women were examined, in forty of whom the local lesions found were believed to justify operation. In thirty of these, abdominal section with removal of the uterine appendages, was practiced. In two of these, a subsequent abdominal section was done for the relief of distressing local symptoms. In one, peritoneal adhesions were separated, and in the other a small hematoma was found in the stump of one of the tubes; probably some ovarian tissue had escaped removal at the first operation. The symptoms were pain, metrorrhagia and uterine catarrh. In three of the thirty cases, a secondary vaginal hysterectomy was done. Two of these had already been subjected to a second laparotomy. One of these was finally cured, both of the local symptoms and the mental disturbance. Two cases were subjected to primary vaginal total extirpation of uterus and appendages. In two, repair of lacerated cervix was done. In six, the guardians of the patients would not consent to operation. Of the thirty abdominal sections, there were cured physically and mentally, ten; decidedly improved, four; unimproved, thirteen; died, three.

Of the three secondary vaginal hysterectomies, which are included among the thirteen unimproved after removal of the appendages, one was cured and two remain as before. Of the two primary total extirpations, one was cured and the other so much improved as to give strong hope of ultimate mental recovery. The two trachelorrhaphies both recovered, mentally and physically.

The final results of the operations at present are therefore: cured (physically and mentally), fourteen; improved, five; unimproved, twelve; died, three. Total, thirty-four.

I have frequently been asked, In what class of cases is an operation indicated? My answer always has been, Where there is local disease discoverable on examination. The mental symptoms, themselves, are no guide. Mania, melancholia, confusional insanity, hystero-epilepsy have all been cured. The same forms of mental disturbance have sometimes not been benefited. In consecutive dementia and in epilepsy, where brain deterioration has already occurred, no improvement can be looked for in the psychic symptoms. I believe that in some cases of epilepsy, where there is pelvic irritation, an early removal of the source of the irritation would be of benefit to the patient. In all cases, however, where local dis-

ease exists, appropriate treatment is indicated, irrespective of the mental condition. Thus, all three of the cases who died were of dementia, two consecutive to epilepsy. In all of these there was abundant local disease to demand interference. In one, there were large pus tubes and ovarian abscesses matting all the pelvic organs into a mass infiltrated with pus. In another, there was an intra-ligamentous cyst as large as an orange. The third case was an especially interesting one. The patient was a young colored woman suffering from a second attack of insanity, the first outbreak having occurred in 1884. No accurate history of her symptoms could be obtained. When admitted in 1895, she was in a state of dementia. On physical examination she was found to have a large tumor in the abdomen, which simulated an ovarian cyst, although no definite diagnosis was made. On opening the abdomen a large fibroid tumor was discovered, fed by a multitude of large blood vessels from the omentum. Some of these vessels were as large as a finger, and one was so large that in its collapsed state it resembled somewhat a section of small intestine. The tumor was not connected with the uterus or any of the other solid organs of the abdomen or pelvis. It was adherent over a space, as large as the palm of the hand, to the abdominal wall on the left side, and suspended from the omentum through the blood vessels penetrating it from the latter structure. The vessels were so friable that catch forceps would tear out as soon as applied. The hemorrhage from the tumor, (which was so soft that the finger penetrated it with ease), and from the fragile blood vessels was terrific. As the bleeding could not be arrested with the tumor *in situ*, the incision was rapidly enlarged, the adhesions between the growth and the abdominal wall separated with the hand, the tumor turned out of the belly and the vessels stripped off. The latter were then tied in mass ligatures in three sections, including as much omental tissue as possible, to prevent the ligatures cutting through the friable vessel walls. Three smaller fibroids were then enucleated from the uterus, and the appendages removed. The abdomen was thoroughly flushed out with hot water, two gauze drains inserted, the wound closed with silkworm-gut sutures and the patient put to bed.

The shock and loss of blood were, however, so great that in spite of the subcutaneous infusion of saline solution the patient died an hour and a quarter after removal from the table. The tumor weighed nine and a half pounds and had probably been a pediculated uterine fibroid which finally became separated from the uterus. One of the smaller growths removed had also a very small pedicle and would probably in time, had the patient lived, have become separated from its point of attachment.

Twelve of the recovered cases have been discharged and all but one are alive and, so far as I have been able to ascertain, remain in physical and mental health. Two are still under observation in the hospital.

Of those noted as unimproved after operation, two have since died of tuberculosis, that fatal scourge of all institutions for the defective classes. In no case has the operation seemed to make the patient worse.

The clinical variety of mental disturbance in the recovered cases was: puerperal insanity (mania), four; melancholia, six; mania, three; hystero-epilepsy, one. Total, fourteen.

In the cases in which complete recovery did not follow the operative measures there were of: melancholia, two; mania, five; puerperal insanity (mania) one; dementia (including four epilepsy), seven (three deaths); paranoia, two; hysterical insanity, two; adolescent insanity, one. Total, twenty.

The number of my cases is too small to allow one to draw any conclusions, but if anything of practical value can be deduced from them it is that puerperal insanity, melancholia and simple mania offer the best chances of cure from the proper treatment of local lesions in the pelvis. Of course it may be said that these forms of mental disorder are just those which yield in the majority of cases to the usual methods of management of insanity. In seven of the cases, however, the insanity had lasted over eighteen months before any treatment directed to the local lesion had been instituted. In a case of hystero-epilepsy, the patient had been in the hospital seven years, and one of the cases of puerperal insanity had been four and a half years insane. I am convinced that earlier operation in appropriate cases would very largely increase the proportion of recoveries.

I do not claim that these results prove that insanity is caused by pelvic disease, but they do show that judicious treatment directed to the physical disease benefits the patient's mental condition. If that is an object to be desired, then I ask for these results, and for the views I have ventured to express, unprejudiced consideration.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

Regular Meeting, June 10, 1895.

WELLER VAN HOOK, M.D., President, in the chair.

(*Concluded from p. 586.*)

DR. E. R. LE COUNT, read a paper on

EMBOLIC ABSCESSES IN THE KIDNEY DUE TO THE MICROCOCCUS LANCEOLATUS OF FRAENKEL.

The following case is submitted on account of the scarcity of similar recorded observations, and as affording positive knowledge concerning the etiology of chronic diffuse nephritis:

Clinical History—(Abstract). S. C., cabinet-maker, age 35, white, entered the Cook County Hospital Jan. 26, 1895. He had been sick one week and complained of pain in the chest. Examination revealed increased fremitus over the right lobe, bronchophony, an abundance of crepitant râles, and dullness on percussion. The heart showed no enlargement, the sounds were obscured by the respiratory murmur, and there were no adventitious sounds. On admission the temperature was 100 degrees F, pulse 118 and respiration 28. On the second day, temperature was lower. On the third day at midnight the temperature rose to 104.2 degrees F. From this time the temperature remained constantly above 101 degrees F, being frequently 103, 102.8, 104.2 degrees, etc. Death occurred February 2, seven days after entrance.

Post-mortem. (Abstract.) The pericardium was smooth and shiny and the cavity empty. Heart, weight, 310 gr.; size, left ventricle, 7.5 c.m. long; wall, 1.5 c.m. thick; right ventricle 8.5 c.m. long; wall, .3 to .4 m.m. thick. On the anterior surface of the anterior mitral cusp was a large atheromatous area. Some similar smaller areas were present on the intima of the aorta in the sinuses of Valsalva. The myocardium was uniform in consistence and color. Aortic, tricuspid, and pulmonary valves appeared normal. Liver, weight, 2,200 gr. It measured 21 x 19 x 18 x 8.5 x 5 c.m. It was rough and granular externally. On section, the lobules appeared elevated and the interlobular regions depressed. Left lung

floated, crepitation was present throughout. In the posterior portions there was an excess of blood and the pleuræ were adherent at the apex. Right lung was solid, and maintained its shape when laid on a flat surface. When placed in water, the whole lung sank beneath the surface. The visceral pleura was thickened and covered with a fibrinous, quite adherent, yellowish gray exudate. On section the entire lung appeared gray with a granular surface, from which casts of the more minute air passages could easily be scraped. Spleen, weight, 380 gr.; size 14 x 10 x 6.5 c.m. The capsule was wrinkled, there was no excess of connective tissue on section, and the substance of the spleen was soft and almost confluent. Right kidney weight, 180 gr., size 12.5 x 7.5 x 4 c.m. Externally, there were seen a number of depressed areas along the external border, which showed reddish centers. On section the cortical and medullary markings were quite distinct. The depressed areas noted externally were found to be due to isolated areas of cortical atrophy. In the pyramids were found numerous, white, gelatinous-like streaks, extending at right angles to the bases of the pyramid. These streaks had the appearance of pieces of silk thread imbedded in the kidney tissue. They were never found reaching from base to apex of the pyramid, but always a portion of the distance only, and were generally in that part of the pyramid nearest the pelvis of the kidney. In the cortex a few similar areas were found, but in place of being linear they were dot-like. The whitish streaks noted in the pyramids measured 1 to 2 mm. wide. Left kidney was similar to the right in size and weight, and like lesions were found on section. The capsule was more adherent than that of the right kidney. The other viscera showed no gross changes.

Bacteriologic examination (by Dr. G. H. Weaver): cover-slip preparations from the pyramidal emboli stained according to Gram's method showed many lanceolate micrococci, arranged in pairs which were single or in short strings. By treating with glacial acetic acid, and staining with solution of gentian violet, capsules are seen about the pairs. Cultures made on Guarnieri's medium made from the embolic areas gave a growth of cocci which corresponded in every way to the micrococcus lanceolatus.

Histologic examination of sections stained with hematoxylin and eosin revealed in the pyramids many linear abscesses or areas of necrosis. Where the changes were least marked, the blood vessel (a branch of one of the pyramidal arteriole pencils) was found plugged with leucocytes. Around this a small zone of infiltration with polynuclear leucocytes. Many of these showed beginning nuclear fragmentation. The larger areas were simply exaggerations of the more minute. In these (the larger), the connection with the blood vessel was not as easily made out, the zone of leucocytic infiltration was wider, the central necrosis and nuclear fragmentation more marked. Sections stained in picrocarmine for twenty-four hours and then by Gram's method gave a beautiful picture of the tissue changes, and showed the centers of the involved areas to contain large numbers of lance-shaped micrococci, in pairs and occasionally two or three pairs together forming short strings. Capsules about the diplococci were demonstrated in sections.

The micrococcus lanceolatus or pneumococcus of Fraenkel was first found in the blood of animals which had been injected with sputum from patients suffering from pneumonia by Klein.[1] The subject was afterward studied by Sternberg in this country.

Foa and Rattone[2] injected pure cultures of the micrococcus lanceolatus into the kidneys of animals and found localized areas of inflammation as a result. Dreschfeld[3] mentions finding the Fraenkel micrococcus in the vessels of the kidney but says nothing concerning the condition of the kidney tissues. Senger[4] describes five cases of meningitis occurring with pneumonia, two cases of endocarditis, and two cases of nephritis. But his methods were such, that they can not escape criticism as to proof of direct etiologic connection with the Fraenkel micrococcus, as was later pointed out by Weichselbaum. The last named author[5] in 1886 found the micrococcus lanceolatus in the connective tissues of the mediastinum, between the esophagus and vertebræ, and about the trachea, in cases of pneumonia. Mircoli[6] described one case of primary acute nephritis in which he found encapsulated micrococci which stained with Gram's method. These he considered as identical with the pneumococcus of Klebs. Weichselbaum[7] again in an article on some of the rarer localizations of the micrococcus lanceolatus, described one case of ulcerative endocarditis which followed pneumonia in which this microbe was found by culture methods in the vegetations of the aortic valve, and in an embolus of the Sylvian artery and the surrounding localized meningitis. In this case two infarcts were found in the spleen but nothing was said concerning their bacteriologic nature or the histologic changes in the spleen tissue. In another case of endometritis, peritonitis and pleuritis, the Fraenkel micrococcus was found as an etiologic factor in all places and it was recovered by culture methods from the kidneys. The liver and kidneys presented a cloudy appearance and seemed swollen. In sections from the kidneys a few micrococci were found in the small blood vessels.

A third case of this series was a case of pneumonia complicated with suppurative joint inflammation. At the autopsy a large infarct was found in the spleen, and in the kidneys were smaller infarcts. Cultures from the kidneys were negative. In sections from the kidney and spleen infarcts only few micrococci were found, and these in the small blood vessels. The author believed these processes to be due to the Fraenkel micrococcus and accounted for the paucity of bacteria by the fact that being dead they would not take the stain. As is well known this microbe may cause suppurative inflammation.

Illustrative of this, Zaufal[8] in an article on otitis media notes its occurrence in an abscess in the region of the mastoid. Weichselbaum[9] finds it as the direct cause of a case of primary acute peritonitis and Boulloche[10] describes in detail a case of multiple suppurative arthritis and myositis caused by the micrococcus lanceolatus. Ortmann and Samter[11] were among the first to describe abscesses of the soft parts due to the micrococcus of Fraenkel. The case was not unlike puerperal pyemia, but occurred in the male. Abcesses formed in the right thigh, right and left popliteal regions, lumbar and coccygeal regions. The observers also made mention of infarcts the size of a pea in the kidneys of a rabbit which was inoculated with a culture of the micrococcus lanceolatus, and in the infarcts the same organism was found.

Nauwerck[12] found in two cases of nephritis which occurred as complications of pneumonia, cocci in the glomerular capillaries which he considered as identical with Friedländer's pneumococcus. His results were incomplete as he made no cultures, nor was Gram's staining method employed.

Pansini[13] reported four cases of primary acute nephritis due directly to the Fraenkel micrococcus. He suggested that the microbe might emigrate upward, as it has been found often in the normal urethra.

A case of primary importance is that reported by Eisenlohr.[14] The patient had pneumonia in December, 1890, at which time the following symptoms of an acute nephritis developed: anasarca, pleural effusion, urine, 6 per cent. albumin, casts, red and white blood corpuscles, sp. gr. 1020 to 1015, quantity twenty-four hours, 1,000 to 1,400 c.c.m. Recovering from the pneumonia, she suffered from uremic symptoms in January, 1891, at which time the quantity of urine dropped from 1,000 or 1,500 to 300 c.c.m. for every twenty-four hours. During the following summer the urine contained 2 to 3 per cent albumin. Oct. 14, 1891, symptoms of uremia again developed, which resulted in death four days later. At the autopsy the kidneys were found small and granular; right, 9 x 6.4 c.m.; left, 9.5 x 5.3 c.m. The cortex measured 2. to 3. m.m. only. The glomeruli appeared as small pale-red points, and the capsules were adherent. Microscopic examination revealed in the cortex numerous large and small areas of round cell infiltration between the glomeruli and convoluted tubules, numerous hyalin casts in the tubules, desquamation of the tubule lining, and in the pyramids also, round cell areas.

While there was no way of proving in the case just cited, that the condition of the kidneys, and consequent uremia, was due to the localization in the kidneys of the micrococcus lanceolatus, the data here somewhat cursorily brought together seem to warrant the following conclusions:

That an infection of the blood with the micrococcus lanceolatus may occur as a complication of pneumonia.

That the secondary localization of these may cause various lesions, abscesses, septic infarcts, simple areas of necrosis, etc.

That an acute nephritis during or following pneumonia, may be caused by embolic processes due directly to the micrococcus lanceolatus.

That in the event of recovery from the pneumonia and the acute nephritis due to such embolic lesions, the re-

sulting kidney lesions may play an important part in the production of a chronic diffuse nephritis.

[1] Centralbl. f. d. Med. Wiss. No. 30, 1884.
[2] Archiv. Italiennes de Biologie T. IV, p. 336, 1884.
[3] Fortschritt der Med. 12, 1885.
[4] Archiv. f. Exper. Path. Bd. XX, p. 389, 1886.
[5] Wien. Med. Jahrsb. 1886.
[6] Centralb. f. d. Med. Wiss. 1887.
[7] Wien. Klin. Worchenschr. No. XXVIII, XXIX, XXX, XXXI, 1888.
[8] Prag. Med. Wochenschr. No. VI, u. f. 1889.
[9] Centralb. f. Bak. und Par. No. II, 1889.
[10] Archiv. de Med. Exper et d' Anat. Path. No. II, 1891.
[11] Archiv. f. Anat. Path. (Virchow) Bd. 120, H. 1, 1890.
[12] Beiträge zur Path. Anat. Bd. I.
[13] Rif. Med. Napoli, 1893. IX, pt. 1.
[14] Deutsche Med. Wochenschr. No. XXII, 1892.

DISCUSSION.

DR. JAMES B. HERRICK.—The more we learn concerning the pneumococcus the more, it seems to me, do we see that we do not thoroughly understand this microörganism and the pathologic changes and clinical manifestations that it produces. Clinically, at least, it seems not improbable that under the head of pneumococcus may be included diplococci that, though morphologically alike, are in reality not identical. The pneumococcus shows itself in the lungs in the manifestation of croupous pneumonia. It may excite inflammations of the various serous membranes, those covering the heart, its lining, membranes of the joints and not infrequently the meninges. We know, too, that in some unknown way it seems to excite epidemic cerebrospinal meningitis, and encephalitis. I have seen an autopsy of a case where the sole finding was a little softened inflammatory area in the encephalon that contained nothing but a pure culture of the pneumococcus. No infection atrium could be found in that patient after a most careful search.

The findings of Dr. Le Count seems to warrant his statement that in some cases of pneumonia the blood itself becomes infected with the pneumococcus.

I have read an abstract of an article by some Italian whose name I can not at present recall, in which he claims to have found the pneumococcus in the blood of twenty-five consecutive patients with pneumonia. In about half the cases the examination was made post-mortem, and in the remaining half the examinations were made during life. Just how reliable his methods are, one can not accurately judge from the abstract. His method of examination was to withdraw blood from the patient's blood vessels and inject a rabbit. The rabbit died of pneumococcal septicemia. He concluded as the result of his examinations that in cases of croupous pneumonia the blood was always infected.

The practical bearing of Dr. Le Count's paper is that the kidney should always be carefully examined, through the urine, as an aid in prognosis, and as an assistance in explaining the protracted course of cases of pneumonia such as the one just described.

DR. FRANK X. WALLS—I have never seen a case of pneumonia with this complication, consequently I have but little to add to what Drs. Le Count and Herrick have said. A question of interest is a possible explanation of why this disease is so infrequent. Suppurative complications in other organs of the body during the process of pneumonia are not infrequent, more particularly of the pleura, the peri- and endocardium, the meninges, etc. Multiple renal abscesses in the course of other diseases, especially of a pyemic character, are frequent, and their frequency is explicable when we consider the histology of the kidney. Yet, despite the frequent occurrence of suppurative processes in pneumonia, this kidney complication is exceedingly rare. It is well known that the diplococcus exhibits great variation in the virulence of its toxic properties, as has been shown by experiments on animals. It is the property of the kidney to eliminate toxins, and thus may render the bacteria inert, and explain why the complication is so infrequent. That the kidney does eliminate these toxins in considerable quantity, abundant clinical and post-mortem evidences of renal damage during the course of pneumonia, would seem to bear witness. The diplococcus has been found in the urine of pneumonia patients.

A case of pneumonia which Dr. Herrick recently saw in consultation, an elderly man, who died on the eighth day, I saw shortly before his death. His urine, when examined showed, in addition to considerable albumin and blood, a considerable number of cocci. But this was a case of nephritis which occurred at about the crisis of pneumonia. Probably the infrequency of these lesions is due to the fact that ordinarily the diplococcus is mild, and the renal epithelium is able to take care of what toxins may be produced, until under unusual conditions of virulency these germs paralyze the integrity of the renal epithelium and abscesses form. The Doctor has suggested that sometimes the disease is produced by secondary extension from the pelvis. It might have been in this case secondary to a pyelitis, which is a much more frequent accompaniment of pneumonia than are multiple renal abscess.

DR. LE COUNT (in closing)—In answer to Dr. Walls, I wish to state that there was no pyelitis and the kidney changes, both gross and microscopical, were not such as could be explained by an extension into the kidney substance from the pelvis of a pyelitis. In the cases Pansini reported he merely offered that supposition as a possible explanation.

American Public Health Association.

Proceedings of the Twenty-Third Annual Meeting, held in Denver, Colo., Oct. 1-4, 1895.

FIRST DAY—TUESDAY—OCTOBER 1.

The Association was called to order at 10:30 o'clock A.M. by the President DR. WM. BAILEY of Louisville, Ky., in the Brown Palace Hotel, with sixty-five members, delegates and ladies in attendance.

The President in a humorous vein congratulated the Association, because the members had had the opportunity and privilege of meeting in the beautiful city of Denver.

DR. HENRY SEWALL, chairman of the Local Committee of Arrangements, delivered the Address of Welcome to the visitors, and explained the symbolic features of the badge which was to be worn by them for the purpose of indentification. The violet ribbon typified the State flower, the columbine, while the yellow or gold colored ribbon to which it was joined was an exhibition of courtesy and intended as a compliment to the Eastern members who were generally regarded as "gold bugs;" others thought the yellow ribbon indicative of the sun flower. The silver brick and pin with which they were fastened, having on one of its three sides the letters Denver, A. P. H. A., and 1895, needed no explanation, and as the suggestion had also come from the East that the bottom had dropped out of silver, the analogy had been carried out by making the brick hollow, another compliment to the Eastern members which they would doubtless appreciate. Your duties are largely regarded as those of a missionary sense, and we expect to profit as a result of the good cause you are engaged in, and we gladly welcome you to the Centennial State. The chairman then made a number of announcements appertaining to the various social entertainments for the visiting delegates and their families.

REPORT OF THE EXECUTIVE COMMITTEE.

This committee, by Secretary Watson, submitted a list of about seventy applications for membership which the committee had considered and recommended that they be elected members of the Association. Upon motion to that effect, the secretary was authorized to cast the unanimous ballot for the names presented. He also read a telegram, dated at Chihuahua, Mexico, from the Mexican delegates, stating that they were delayed on account of a washout along the railroad.

The first paper announced,

THE MISSISSIPPI RIVER AS A SEWER,

and was read by DR. JOSIAH HARTZELL, of Canton, Ohio, member of the Ohio State Board of Health. The author produced statistics to show the tremendous quantities of dead animal matter which yearly floated down the Mississippi, and the consequent damage to public health. He criticised Chicago and the sewer purposes to which it devoted the Chicago River. Comparisons were made of the Valley of the Mississippi, with the Nile, Rhine and Chinese rivers, and gave an estimate of the territory drained and the consequent amount of filth, dead and decaying vegetation, carcasses of animals, etc., that were washed into the river, converting it into a *cloaca maxima* for the whole interior basin of the continent. In Leeds, England, the authorities, on complaint of the residents living below the city, prohibited the municipal government from using the stream for such purposes, and that must be the ultimate result in this country. Strict National legislation to prevent the principal streams of the country from pollution, in order to save the game fish in those streams was suggested. Whether this result will be obtained, he doubted, so long as the average politician is engaged in scrambling for office, as he is not a sanitarian and is not greatly interested in public health matters. Incidentally, the writer gave a brief description of the great drainage canal at Chicago, and the benefits to be derived therefrom. Disposal of sewage in the cities of Berlin, Paris, London and New York were mentioned

and briefly described. The fever plagued cities of western Pennsylvania, West Virginia, Ohio, Illinois, Minnesota and Nebraska were also mentioned. The statutes of Illinois, Ohio and other States were quoted at length, regarding the pollution of streams. The laws on fish culture were also quoted *in extenso*.

The remedy advocated, is the establishment of a government commission, analogous to the English Rivers Pollution Commission, or the German Imperial Board of Health. This commission should supervise the sanitary condition of navigable waters, and should have ample authority. So long as the general government is inert and indifferent in regard to this matter, the State Boards of Health of all the States bordering on the Mississippi system of waters are handicapped. Their efforts to suppress epidemics arising in other States and carried to them through the medium of rivers under government control, are paralyzed. No general plan of sanitation and of stream purification can be successful until the State Boards of Health have the practical coöperation of the Federal authorities, and this can be accomplished by a National Department of Health or a commission appointed by Congress having this matter under its charge.

The succeeding paper was upon an analogous topic,

WATER POLLUTION, AND PURIFICATION OF WATER SUPPLIES,

read by Dr. Peter H. Bryce, of Toronto, Secretary of the Provincial Board of Health of Ontario, who considered the subject mainly in its international aspect. He criticised the authorities at Buffalo and the recklessness with which they distributed garbage, so that contractors might be the gainers, commercially, in relieving that city of its unpleasant effects, while the cities across the border would be the sufferers. He cited instances in which he had pursued some garbage boats in a cutter in Lake Ontario, and stated that the government had narrowly escaped an international complication on account of what he had done. It was the duty of health officers on both sides of the line to see that sanitary regulations were rigidly enforced. Especially was this true, regarding the St. Clair or Detroit River, and the Niagara River.

DISCUSSION.

Dr. Ernest Wende, of Buffalo, N. Y., desired to make a correction regarding the disposal of garbage in his city. Buffalo cremates her garbage, and does not deposit it in the Niagara River or Lake Ontario.

Dr. A. W. Cantwell, of Davenport, Iowa, said regarding the pollution of the waters of the Mississippi River, that he thinks their purification can only be brought about by National legislation, and the same authority will prevent the dumping of garbage into our rivers. The proper method to dispose of the latter is by cremation, and this costs something.

Dr. E. A. Guilbert, of Dubuque, Iowa, said he deeply appreciated any action that may be taken in this matter by this Association, and that this matter was before the last Congress. His State Board of Health commended the bill, as this can not be done by State legislation.

Dr. P. H. Bailhache, of Staten Island, N. Y., said that if this matter, or any bill having for its object the passage of such measure was before the last Congress, that the subject was dead—as the last Congress had died.

Dr. J. J. Kinyoun, of Washington, D. C., thinks the subject of the pollution of water supplies in the United States is unique and stands alone. He advocated the appointment of a special commission to take charge of this matter.

Dr. Felix Formento, of New Orleans, La.—We should not lose sight of local interests from a sanitary point of view. These platonic recommendations are not usually acted upon. We should do something beyond the expression of our opinions. We must have a practical plan. I do not think the lower Mississippi is polluted, as has been stated, from the offal deposited in its waters several hundreds of miles above New Orleans.

Dr. J. N. McCormack, of Bowling Green, Ky., moved, duly seconded, that a committee of three, members of this Association, be appointed by the chair, with Dr. Bryce as chairman, having full power to formulate a plan and suggest to Congress that something in the way of National legislation in this matter should be done.

Dr. R. H. Lewis, of Raleigh, N. C., thought that this committee should suggest to Congress just what should be done, and that it should submit the plan to be carried out.

The motion then prevailed.

Dr. E. P. Cook, of Mendota, Ill., thought that there is no subject more worthy of our consideration than that of water pollution and pure water supply. Purity of water for domestic purposes and drinking purposes is one of the great problems that we are now discussing in interior Illinois where I live. Filtering and sterilization will do it, but a cheap method is what we are desirous of getting. What disposition is to be made of garbage, rubbish and sewage is another very important subject to deal with. Cremation of the former is costly where a crematory would have to be erected and kept in operation in a small city of 5,000 inhabitants; while the latter, we know, when it finds its way into our wells and small streams contaminates the water in them. This is inevitable. Regarding Chicago and her disposal of sewage, the nearest course to the sea is through its new drainage canal, the Illinois and Mississippi Rivers. He thinks our Canadian neighbors should be under obligations to Chicago for diverting her sewage away from the lakes.

Mr. R. Hering of New York, spoke from the standpoint of a civil engineer. He heartily indorsed the sentiments set forth in both papers, in their ideas of the purity of water supplies. He believed in National legislation upon this subject, although some of the questions advanced in the first paper are impracticable. People can not pay for complete purification of drinking water. The question is not nearly as serious as has been made to appear here to-day. An estimate has been made, that we can not precipitate the sewage for less than 30 cents for every man, woman and child. Regarding the Chicago drainage canal, 600,000 cubic feet of water per minute from Lake Michigan, passing through it, will purify the stream along down the canal and river to the Mississippi, then the Chicago River will not be nearly so bad as it is now. All waters for drinking purposes should be filtered by those residing in large cities. As for garbage, this should never be permitted to be put into streams. Civil engineers are often confronted with these questions, and almost as frequently perhaps, it is a question of not what we ought to do, but what we are obliged to do, as the next best thing on account of lack of money.

Dr. C. O. Probst, of Columbus, Ohio, said that the farmers in Ohio have combined together, and given bonds, and in two or three instances they compelled cities for instance Canton, Oberlin, and Fostoria, to purify the water supply or erect a crematory as was done in the latter city. These cities at first refused to do this. Fostoria built what they call an intermitting chemical plant.

Dr. Bryce closed the discussion, by stating that he thought a civil engineer like Mr. Hering should be made a member of the committee.

The concluding paper of the first session, was "The Report of the Committee on Animal Diseases and Animal Foods," by D. E. Salmon, D. V. M., chairman, Washington, D. C., which was read by Dr. Hewitt of Minneapolis. The report was brief, and one of the material points it contained was that the United States government should have control of meat inspection; particularly is the inspection of pork carried on in a perfunctory manner, and it is not thorough in the various States in the Union.

The report was discussed first by Dr. P. H. Bailhache who stated that the inter-state law is drawn as closely as it can be, for the enforcement of any law, and the Federal government can not further interfere. It has no right to step in and order anything done different from that which has been properly enforced by any State.

Dr. Carl Weidner of Louisville, Ky., said he could not indorse the argument of Dr. Salmon in the matter of pork inspection as being inadequate and useless for trichina. This argument is dangerous. A thorough microscopic inspection will detect trichinous meat. We might as well say that we can not detect polluted water. This argument is unjust to the people. Thorough inspection will do a great deal of good.

Dr. Hewitt stated that he does not take kindly to State inspection. Tuberculin and mallein is supplied to a State when requested, from the United States government. Over one thousand animals in Minnesota had undergone the test. Coöperation between a State and the nation is easily arranged, and this is a practical way to accomplish that which is desired

Dr. Kinyoun indorsed in the main the views contained in the report, but thought not enough emphasis was placed on the matter of tuberculous meat. While the greater portion of bad meat can be detected if the carcasses are carefully inspected, yet as long as we shut our eyes to microscopic examination, we are going to invite tuberculosis.

Dr. H. N. Avery of Indianapolis, Ind.—In relation to tuberculous meat and swine fever, nothing but local inspection by local health officers can detect these conditions. This should be done by meat inspectors. At Indianapolis nearly

five hundred head of milch cows had been inspected in the last thirty days. The sputa, and milk, cheese and butter should all be examined microscopically. Ocular and physical examination are entirely useless. Tuberculin is the only infallible test, and in nine cases out of ten, we can detect tubercular disease if it is present.

DR. HENRY MITCHELL, of Ashbury Park, N. J., Secretary of the State Board of Health of New Jersey, offered the subjoined preamble and resolution, which under the rules was referred to the Executive Committee:

WHEREAS, An order of the Post Master-General prohibits the use of the mails for the transportation of diseased tissues.

WHEREAS, Specimens suitable for bacteriologic examination can, when inclosed in proper packages, be transported in the mails without endangering the health of persons who may handle them, and without risk of contaminating other mail matter.

WHEREAS, bacteriologic examination in cases of tuberculosis and certain other infectious diseases constitute an invaluable defense against the spread of the pestilential affections by providing an exact method for early and accurate diagnosis. Therefore be it

Resolved, That the American Public Health Association hereby respectfully requests the Postmaster-General to so modify the order now in force that specimens of diseased tissues, when properly inclosed in approved mailing packages, may be admitted to the mails for transmission to State and municipal laboratories.

FIRST DAY—AFTERNOON SESSION.

The afternoon session was called to order at 2:45 o'clock with PRESIDENT BAILEY in the chair, and was devoted to a symposium on Car Sanitation. The first paper presented on this subject was a brief one, and in absence of its author, Mr. E. C. Jordan, C. E., of Portland, Me., was read by Dr. A. G. Young, of Augusta, Secretary of the Maine State Board of Health. Although the writer made no recommendations, he described the manner in which the Pullman and Wagner sleeping car companies cleaned their cars, removing rugs, carpets, mattresses, etc. The mattresses are renovated every six months and the blankets changed once in three months. In case of any infectious disease the utmost care is used, and disinfectants are liberally applied.

The second paper was

ON THE VENTILATION OF RAILWAY COACHES,

by PROF. S. H. WOODBRIDGE, of Boston, Mass., (one of the professors in the Institute of Technology of that city) which was, in the absence of the author, read by Dr. S. H. Durgin, ex-President of the Association. The following is a brief synopsis:

In enumerating the discouragements which meet those trying to secure perfect ventilation, the author stated that human frailties were a greater obstacle than mechanical difficulties. The ventilation necessary in a hospital is unnecessary in a railway coach, and accommodation trains require less ventilation than cars used on lightning express trains. The per capita space is about sixty feet in the average day coach. To regularly supply the quantity of fresh air requires many improvements on the present unreliable and inadequate methods. The use of vestibule cars, made up for long runs, interferes with ventilation from the ends of the cars.

These propositions were laid down for the proper ventilation of cars: The air must be furnished by other than natural means. The supply must be affected as little as possible by the movement of the coach. The heat must be furnished from the floor, and the air must be filtered to avoid dust and cinders. In winter the air must also be warmed continuously, and regularly supplied without annoying drafts. The action must be plenum rather than vacuum, and care must be used to secure perfect distribution. An electric fan with a suitable filter was recommended and overhead channels for supplying air. The development of electric appliances will assist in securing a perfect system of ventilation. Finally, it should be remembered that in all ventilating undertakings but one-half of the requirements are fulfilled when the most perfect apparatus conceivable is furnished. The excellence of a tool does not insure the quality of its product. Quite as much depends upon the user as the tool, and not infrequently a superior apparatus is made, on its reputation, to bear the burden of the operator's infirmities. It would seem to be of more than doubtful utility to equip coaches with carefully designed means for ventilation unless railroad employes are systematically trained to their use, and they and the traveling public are educated to habits of cleanliness and are free from the trouble-making notions and imaginings which prevail, even among cultivated people, with reference to ventilation. The proper function of ventilation begins only after cleanliness has done its most perfect work. For a long time to come, to an innocent and dutiful ventilation is likely to be laid the sin of uncleanliness of person and environment.

Ventilation deals with unseen air, unseen aerial movements, and generally with unseen motive forces. The field is rich for a rank growth of notions and imaginings and quackery. Hence the large and important part imagination plays in ventilation effects. It is important, therefore, that any system planned to give the surest and highest satisfaction should furnish ocular evidence of its existence and of its action. In a well ventilated room a raised window through which no air moved inward has often been known to give great and immediate relief. Any successful crack ventilation must include such self-announcing means as shall enlist imagination in its favor and put an effective stop to window raising, that fatal disturber of the working of artificial ventilation. In conclusion, he thought the imagination was an important factor and not to be overlooked in any system of ventilation, but the railway managers should be required to remove every reasonable excuse for opening car windows.

The next paper announced on the program,

RELATING TO CAR SANITATION,

was by DR. DOMINGO ORVANANOS, of Mexico, Mex., and was presented by Dr. C. O. Probst. He briefly described the opposite ideas which prevailed in the United States and Mexico with reference to car ventilation, due to the different climatic conditions. The subject was one full of difficulties. In Mexico, where the railways are generally traversing high ground, the ordinary way of opening a few windows keeps the car comfortable; while he had noticed that in America the travelers generally wished the ventilators removed and the windows closed, the reverse was the case in Mexico. The ventilation must be regulated according to the temperature. It is much more difficult to devise a means of ventilating sleepers than day coaches. He finds the prevention of the transmission of disease an even more difficult matter than the regulation of ventilation, but thinks the Mexican railways are better off than those of the United States.

1. The cars, except the sleepers, are not furnished with upholstered seats.
2. Only a limited number of persons travel.
3. Two of the commonest infectious diseases, tuberculosis and diphtheria, are almost unknown in Mexico. Other infectious diseases are not propagated in railway cars because convalescents are not allowed to travel. After much investigation, he had only found a few cases of bronchitis, pneumonia and pleurisy which originated in cars. In treating of measures on this subject, it is always necessary to insist on them until their adoption is obtained. The measures he advocated were:

1. Watchfulness on the part of the local sanitary authorities to whom pertain each of the railroad stations with large traffic, and with the object of preventing the embarkation of individuals who might transmit the diseases.
2. The appointment of medical inspectors on the lines or in the places where it is considered necessary.
3. That the railroad cars should be furnished with cushions and hangings that can be easily taken off and replaced.
4. The disinfection of the cars themselves, either wholly or in part, whenever the medical inspectors should deem it advisable.
5. The prohibition under severe penalties of expectorating in any part except in the cuspidors, of which a sufficient number should be provided, and which should contain a solution of bichlorid of mercury of 1 to 1,000.

The last paper on the program and the most thorough treatment of the subject was the

REPORT OF THE COMMITTEE ON CAR SANITATION,

which was presented by DR. GRANVILLE P. CONN, of Concord, N. H., chairman of the committee. He invited attention to the fact that his subject was one which was evidently growing in interest, the proof of this being amply shown in the fact that there were three papers on this question, and a whole session devoted to its consideration. Dr. Conn thinks there is danger of overlooking the ventilation of the day coaches, in dwelling on that of sleeping cars. He spoke also of the necessity of holding employes responsible for the condition of the cars in their charge, and cited the Wagner Palace Car Company as having instituted a school of in-

struction for their train employes. A number of reports from various railways were submitted, showing the sanitary precautions used in the care of cars, supply of drinking water, ice, etc. A fact cited worthy of note was the international conference on sanitary care of railways which was recently held in Amsterdam. Its object was to consider the methods in use in various countries to care for the interest of travelers on land and sea. Its work was divided into three heads: 1, capacity of officials; 2, medical service; 3, hygienic interests of travelers and employes. As yet the sessions have not been made generally public.

For the purpose of obtaining accurate information, Dr. Conn sent out a circular letter to the general passenger agents, and was generally referred to the managers of the rolling stock. The answers show a wide range of opinion and practice in these matters. One road having one of its termini in Denver says it has no sanitary system, and does not believe it would be practicable or necessary to have an inspection similar to that made of the wheels. The Chesapeake & Ohio railway has a very satisfactory system, as has also the Baltimore & Ohio. The conditions on the Southern Pacific are by no means reassuring to the traveler. Dr. Conn said, in conclusion, that this was a matter which was receiving more and more attention, and that the through line that takes the most advanced position in alleviating the discomforts of the traveler; that shows by the cleanliness of its cars, their heating and ventilation, and above all by the uniform courtesy of their employes, the fact that they have a department of hygiene as well as of surgery, will reap its own reward, and save thousands of dollars in its advertising department. Of the preceding papers, he said: the conservative manner in which Senor Dr. Domingo Orvananos, of the Republic of Mexico, has treated the subject of car sanitation, I most heartily commend the same to the public, and to the railway managers of countries now embraced by this Pan-American Association. The sentiments contained in his report are those of wisdom and ripe judgment, and are worthy of the man, as well as an honor to the Republic of which he is a representative sanitarian.

The report of Professor Woodbridge, of Boston, is a clear and concise statement of the sanitary conditions which he found in railway cars that came under his observation, and the suggestions which he has made are to be noted, and if adopted by railway companies would insure to the public more healthy conditions in traveling, and prove of immense value to the railroads themselves.

DISCUSSION.

DR. KINYOUN called renewed attention to the disinfection of coaches, especially of the sleeping cars of any of the sleeping car companies. They should be disinfected at the end of the route, or of every trip if it lasts over twelve hours. Phthisis, diphtheria, and perhaps pneumonia, and the exanthems could be transmitted from State to State, hence the most stringent methods should be insisted upon everywhere. What germicide shall we use for the germs of tuberculosis? A 15 per cent. volume of burning sulphur is not sufficient, although it might do for the exanthems. Steam will, in a certain sense, prove adequate when used by an experienced or competent person. An ordinary car can be disinfected in ten minutes by the use of a spray of formalin which he had found to be the best disinfectant or agent to kill smallpox and other germs. It is more effective than tricresol or carbolic acid and is easy to handle.

DR. DURGIN inquired of Dr. Kinyoun if he had considered the separation of the upholstered work, mattresses, etc., from the woodwork in the use of formalin or sulphur.

DR. CONN closed the discussion by saying that formalin is a well-known agent, and when it dries, it forms a dust or powder that will kill germs in the carpets and in the other furnishings of our cars. He also stated that he thinks the mechanic and the sanitarian are coöperating in this matter.

At 4:10 o'clock the session adjourned until 8 P.M.

FIRST DAY—EVENING SESSION.

The Association re-assembled at 8:15 o'clock P.M. at the Trinity M. E. Church, with the President and Vice-President (alternating) in the Chair. Others on the platform were ex-Presidents La Chapelle, Montizambert, Hewitt, Formento, Durgin, His Honor Mayor McMurray, His Excellency Governor McIntyre and Chancellor McDowell. Several organ solos were rendered by Dr. J. H. Gower. After prayer, President Bailey introduced Governor McIntyre, who formally welcomed the Association to the Centennial State as follows: No Association which had honored Denver with its presence was more important in the subject matter of its deliberations than the one which had just convened. He drew a comparison between the treatment of the health of the individual as contrasted with the health of individuals in the aggregate. So important is this subject that even now the matter of public health does not receive the consideration which is its due. He believed in the elevation of the public health officers to the position of recognized State officials. He heartily welcomed the Association to this State and capital, and closed amidst applause.

Mayor McMurray was then introduced. He said it was a pleasing duty which devolved upon him to welcome them individually and as an Association. The subject to which they devoted themselves transcended in value any that could come up for consideration among any body of men or women, for the human life is of preëminent importance. Whatever the line they might consider, whether disease in the epidemic or ordinary form, their effort was to advance the public welfare. Whatever they did he hoped they would have a very pleasant and profitable time while in Denver and that the result of their labors would be of value not only here but in every community from which they hailed. He hoped their stay would be enjoyed and they would find pleasure in returning here in the days to come in their capacity as private citizens. The Mayor was greeted with a burst of hearty applause.

The magnificent "Offertoire" of Batiste was then rendered by Dr. Gower, after which Dr. Wm. Bailey of Louisville, Ky., was introduced to deliver his Annual Address as President of the Association. Dr. Bailey begged to acknowledge the honor of having been President for the past year. The Association numbered in its members and workers some of the most illustrious sanitarians of the continent. "I congratulate the Association," said Dr. Bailey, "upon its meeting in the convention city, the Queen City of the Plains, the beautiful city of Denver. In the wonderful State of Colorado, fit Centennial State, with advantages as yet untold, with a climate that will challenge the admiration of the sanitarians as perhaps none other can, with an atmosphere of marvelous purity almost sterile as to pathogenic germs, and without the necessity of international agreement of unlimited coinage, the coin of the realm, the parity of which is guaranteed and maintained by the Almighty himself.

"The American Public Health Association had a valuable object lesson of the good the Association had done by a reduction of 50 per cent. in the death rate of this city," Dr. Bailey continued. "The past year had been a good one from a health standpoint. Cholera threatened the Western border, but the efficient corps in California might be depended upon to keep it out, calling for assistance if need be. He spoke of the importance of quarantine regulation, and the value of the report on the purity of water supply. A number of college professors were unable to attend the meeting because of the college sessions having commenced. This suggested the change to an earlier date the time of meeting. The Association should perfect its plans to celebrate the centennial anniversary of Jenner, the discoverer of vaccination. He suggested a memorial report. He said there was hope that in time they would be able to afford immunity from such diseases as cholera, scarlet fever, diphtheria and consumption, as they now have immunity from smallpox."

The speaker wondered that there was not a National Department of Health. Gladstone had termed the work the highest object of government. More careful quarantine laws were needed. Careful inspection would prevent many of the contagious and infectious diseases. The difference between the government of the United States and foreign governments in respect to the investigation of diseases and their causes was contrasted. Professor Koch was assisted by his government.

The question of the pollution of the water supply was next touched upon. Nothing was of more importance than the purity of water. He hoped the members of the convention would assist the work of the committee appointed to investigate this vital question.

"The greatest question," said the speaker, "to sanitarists is immunity from disease. Management of disease must become more national as this was investigated and made known." He quoted the result of vaccination in lessening the ravages of smallpox in proof of his statement, and added that smallpox should be considered a disgrace to a city. He advised a report setting forth the truth regarding vaccination, so as to remove false impressions. Such a report would be a fitting memorial to Jenner. He gave it as his opinion that immunity from other infectious diseases was sure to come in a few years as a result of study of bacteria and disease germs.

CHANCELLOR MCDOWELL was the last speaker on the

program. He said that the public health question had made many persons uncomfortable. He was afraid to go anywhere because he feared to meet a microbe with a club. It was uncomfortable because the physicians had turned the microbe loose. Now there was but one thing to do. That was to give public health the right of way. He believed in personal liberty, but personal liberty required some restraint because of the public welfare. The man who refused to obey the public health officer deserved punishment. Were not the water rates so high he would favor the mayor turning the hose on the offender. The health office should be taken out of politics. If it were kept there he feared it would become full of microbes. The speaker urged upon the public the necessity of joining with and seconding the health officer in his work, and closed by a wish for the thorough enjoyment of the delegates during their stay.

At 9:30 o'clock the Association adjourned until Wednesday forenoon.

(To be continued.)

BOOK NOTICES.

The Pathology and Surgical Treatment of Tumors. By N. SENN, M.D., PhD., LLD., etc., etc. Illustrated by 515 engravings, including full page colored plates. 8vo, pp. 709. Philadelphia: W. B. Saunders. 1895.

In the year 1890, Professor Senn in the preface to his work on the "Principles of Surgery," said: "When the subject of tumors was reached it was found that the manuscript had become so voluminous that it was deemed advisable to publish the volume without this part of the intended scope of the work, an arrangement to which the publisher kindly gave his consent. It is the author's intention to make good this defect by the preparation in the near future, of a special work on 'The Pathology and surgical Treatment of Tumors.'"

The book under consideration is the outcome of the promise made five years ago, and the promise has been well and faithfully performed in the production of this handsome volume.

There are thirty chapters, viz.: I, Origin and Nature of Tumors; II, Morphology and Multiplication of Tumor Cells; III, Anatomy and Biology of Tumors; IV, Pathology of Tumors; V, Tumors in Plants and Animals; VI, Etiology of Tumors; VII, Clinical Aspects of Benign and Malignant Tumors; VIII, Transformation of Benign Tumors and Post-Natal Embryonic Tissue in Malignant Tumors; IX, Diagnosis of Tumors; X, Prognosis of Tumors; XI, Treatment of Tumors; XII, Classification of Tumors; XIII, Papilloma and Onychoma; XIV, Adenoma; XV, Cystoma; XVI, Carcinoma; XVII, Fibroma; XVIII, Lipoma; XIX, Myxoma; XX, Chondroma; XXI, Osteoma; XXII, Odontoma; XXIII, Angioma; XXIV, Lymphangioma; XXV, Lymphoma; XXVI, Myoma; XXVII, Neuroma; XXVIII, Sarcoma; XXIX, Teratoma; XXX, Retention Cysts.

This book is the most exhaustive of any recent book in English on this subject. It is well illustrated and will doubtless remain as the principal monograph on the subject in our language for some years. It will be observed that the new spelling has been generally followed.

The book not only includes the pathology of tumors, but in describing the surgical treatment discusses fully the operative surgery of the regions involved. Those interested in any special branch of operative surgery, except ophthalmology, will find the modern operations described in detail. The vast experience of the author has told its own story in these pages, which are replete with solid information, and his masterful acquaintance with German literature shows itself at every turn. The book is handsomely illustrated, and printed on good paper. Many of the illustrations are inserted plates. The publisher has done his work well, and the author has given a notable and lasting contribution to surgery.

Cutaneous Medicine; A SYSTEMATIC TREATISE ON THE DISEASES OF THE SKIN. By LOUIS A. DUHRING, M.D., etc., etc. Part I, Anatomy of the Skin, General Symptomatology, General Etiology, General Pathology, General Diagnosis, General Treatment, General Prognosis. Illustrated. Royal 8vo, pp. 221. Philadelphia: J. B. Lippincott Company. 1895.

"The present work," says the author, "has been written to take the place of the author's former 'Practical Treatise on Diseases of the Skin,' which for several years has been out of print."

The vast experience of Prof. Duhring as a teacher and practitioner makes his statements authoritative, and his book trustworthy in all matters pertaining to dermatology proper. The author, pp. 216 and 217 in mentioning skin grafting, quotes the old Hunter experiment of the transplantation of the cock's spur, and of the tooth, and then passes immediately to Reverdin's epidermal grafts in 1869. The remarkable experiments of the late Frank Hastings Hamilton, then of Buffalo, in skin grafting, set forth in a paper read June 27, 1854,[1] more than fifteen years prior to the appearance of Reverdin's paper, which appeared in the *Gazette des Hôpitaux* for Jan. 11 and 22, 1870, are not noticed.

As a rule, the author has very carefully noted all recent literature and has even quoted from papers read at the last meeting of the ASSOCIATION in 1895.

The paper is thin and inferior, but the illustrations are numerous and well executed plates carefully inserted. We shall look with interest for the remaining parts of this system. The author has great power of condensation. There is no superfluity or redundancy in his expressions; always clear, never involved, and withal extremely precise, he manages to put nearly twice as much in a page as the average writer. The work therefore, will be encyclopedic without being bulky.

A Text-Book on Nervous Diseases. By AMERICAN AUTHORS. Edited by FRANCIS X. DERCUM, A.M., M.D., Ph.D. With 341 engravings and 7 colored plates. Philadelphia: Lea Brothers & Company. 1895.

We have in this volume the latest of "American" text-books, and one that worthily maintains the honor of the American name. The list of the authors who have contributed, under the able editorship of Dr. Dercum, to produce this work is enough to justify expectations that will not be disappointed on its careful examination. As a composite production it perhaps lacks the symmetry that a single authorship would give, but this is so little an advantage that probably most of its readers will prefer it as it is.

Among the articles deserving especial mention as most excellent statements of our present knowledge of their subjects, may be mentioned the introductory chapter on Methods of Examination, by Drs. Weir Mitchell, Dercum and Oliver; that on Nervous Affections following Railway and Allied Injuries, by Dr. Philip Coombs Knapp, which is one of the best and most judicious descriptions of this forensically important class of cases, that we have seen; the chapter on Cerebral Localization, by Dr. Mills, which seems thoroughly up to date; and that on the Diseases of the Cranial Nerves, by Dr. de Schweinitz. We mention these, not invidiously, as better than the rest, but simply because for one reason or another they particularly attracted attention. All the contributions to the volume seem to be excellent, and the book is cordially recommended to American readers as representing the actual status of our knowledge of its subjects, and as the latest and most fully up to date of any of its class.

Modern Materia Medica, WITH THERAPEUTIC NOTES FOR THE USE OF PRACTITIONERS AND STUDENTS OF MEDICINE. By DR. OTTO ROTH. Seventh edition. Revised by DR. GREGOR SCHMITT. 8vo, pp. 467. New York: Wm. Wood & Company.

Whatever may be the uses of this book in Germany, if it is ever to be of any particular service in the United States it must be brought to conform to the United States Pharmacopœia. As it has been produced, it is in the first part a mere catalogue of drugs and in the second a list of diseases with reference to the appropriate drug therefor. The obsolete dosage of the old British and United States Pharmacopœias is used, which is all the more remarkable, as the United States Pharmacopœias of 1890 adopted the decimal system and the present revisers of the British Pharmacopœia long ago announced their intention of joining the remainder of the civilized world in the use of the decimal system of weights and measures.

[1] Buffalo Med. Jour., vol, X, p. 435.

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SATURDAY, OCTOBER 12, 1895.

THE TREATMENT OF DIPHTHERIA BY ANTITOXIN.

WELCH contributes an important article on the treatment of diphtheria by antitoxic serum (Bulletin of the Johns Hopkins Hospital, July-August, 1895,) and studies carefully the statistics of the results already reported.

In a brief historical introduction, he shows that while BABES and LEPP in 1889 were the first to show by the way of experiment that it was possible to vaccinate with fluids and cells of animals which had been rendered refractory to certain diseases, such as rabies, yet the first publication clearly demonstrating the principles of serumtherapy was made by BEHRING and KITASATO in 1890, in which they brought forward proof of the immunizing and curative property of the blood and serum of animals artificially immunized against tetanus; and then BEHRING and WERNICKE demonstrated that the serum of animals artificially immunized against diphtheria has the power to protect and cure susceptible animals inoculated with the diphtheria bacillus or its poison. In the fall of 1891 the first trial of serum of immunized animals in the treatment of human diphtheria was made in VON BERGMANN'S clinic in Berlin. In April, 1893, BEHRING referred to thirty cases treated with so-called normal serum. In April, 1894, EHRLICH, KOSSEL and WASSERMANN reported 220 cases treated with the serum, and the era of serum treatment of human diphtheria by approximately sufficient doses of the antitoxin really begins with this publication. In September, 1894, ROUX presented the subject at the Hygienic Congress in Buda-Pesth with such clearness and force and brought forward so strong and convincing statistics that the attention of the physicians of the world was arrested and the antitoxic treatment of diphtheria has, since that time, continued to be the foremost medical topic of the day.

While the laboratory does not present any more conclusive experiments than those showing the power of antitoxic serum to prevent and to cure the morbid process caused in animals by the inoculation with the diphtheria bacillus or its poison, yet the question arises as to what extent the conditions of the treatment of experimental diphtheria with antitoxin are similar to those in the use of the same agent in the treatment of human diphtheria. WELCH concludes that there is identity in essential points, anatomic and etiologic, between experimental diphtheria and uncomplicated human diphtheria. Thus there is no longer any question but that in uncomplicated human diphtheria, as well as in experimental diphtheria, the local inflammation at the site of the infection is caused by the multiplication of the LÖFFLER bacillus and that the system's symptoms are due to the absorption of toxins formed by the bacillus, and, consequently, it would be hard to understand why an agent, such as the antitoxin, which neutralizes the toxins in the animal body should be unable to neutralize the toxic effects of the same substance or substances in human beings. At all events WELCH, is firmly of opinion that the results obtained from experiments on animals justify and demand the most thorough and careful trial of this new treatment in human beings.

Concerning the nature of the so-called antitoxins and their mode of action but little is known. There are two prominent theories as to the mode of action of the diphtheric antitoxin, viz., the chemic and the vital. The chemic theory holds that the antitoxin directly neutralizes in a chemic sense the toxins. Experimental evidence, however, is in favor of the vital theory that the antitoxin acts through the agency of living cells and that it probably renders the cells tolerant of the toxins.

Antitoxic serum exerts no bactericidal effect upon the diphtheria bacillus, and virulent bacilli may persist in the throat days and even weeks after recovery, after the use of the antitoxin.

The dosage of the antitoxin in human diphtheria is empirical. The main factors in determining the dose are the age of the patient, the duration and the severity of the attack. In this way it can easily happen that an insufficient dose is given and it is now well understood that in the early period after the introduction of serum entirely insufficient doses were used.

The most important difference between experimental and human diphtheria is the fact that, while experimental diphtheria is a single, pure infection, human diphtheria is often complicated with mixed infections, the most common complicating microorganism being the streptococcus pyogenes. Thus

REICHE found the streptococcus in the kidney and spleen in 45.2 per cent. of forty-two autopsies on cases of diphtheria in which LÖFFLER'S bacillus had been demonstrated during life; streptococci and staphylococci were found together in 64.3 per cent. of these cases; these results indicate significantly the frequency and earliness of the mixed infection. There can be no doubt that the remedial rôle of the antitoxin is materially restricted by its inability to combat streptococcus sepsis, broncho-pneumonia and other forms of secondary infection. It is also a well-known fact that all necrosis and changes in the nerves may occur very early in diphtheria, and it is, of course, evident that the antitoxin can not restore cell life or repair degenerated nerves when such retrogressive changes have occurred before its use. A knowledge of these conditions will emphasize the importance of sufficient dosage and timely administration of the antitoxin.

Having considered the experimental basis and the theories of action of antitoxic treatment, the importance of early use in sufficient doses and some of the pathologic relations of human diphtheria, WELCH turns his attention to the evidence at hand concerning the efficacy of the new treatment. He finds that the general impression of clinicians who have had good opportunities to observe the effects of antitoxin is overwhelmingly in its favor and cites the observations of BAGINSKY, HEUBNER, GANGHOFNER and others, who all express favorable general opinions. But general clinical impressions do not furnish any strict scientific proof of the value of a therapeutic agent; here statistics are necessary. WELCH has collected 7,166 cases from eighty different sources and it is not necessary to state these have been gathered with all possible accuracy and that they are considered from various points of view, in order to eliminate all the possible sources of error with which statistical results nearly always are vitiated.

Of these 7,166 patients with diphtheria treated with antitoxin, 1,239, or 17.3 per cent. died. The previous or simultaneous mortality of cases not treated with antitoxin is stated in forty-six of the reports, which contain 5,406 cases treated with antitoxin, with 1,008 deaths, a fatality of 18.6 cases. Estimating the number of deaths in these cases upon the basis of the previous or simultaneous fatality for each group, there would have been 2,279 deaths, or 42.1 per cent. *There was, therefore, an apparent reduction of case mortality by the use of antitoxin of 55.8 per cent.* Separating the hospital cases from those occurring in private practice, the unusually low death rate of 18.7 per cent. is obtained for hospital cases. WELCH finds no reason to believe that the low percentage of fatality of diphtheria treated with antitoxin can be referred in any large measure to the prevalence of an unusually mild type of the disease. He does think, however, that a large number of cases are received for treatment in the earlier stages of disease now than formerly, and that for this reason the antitoxin statistics can not always be suitable for comparison with statistics based upon the former treatment of diphtheria, inasmuch as it is universally admitted that any good treatment of this disease gives better results the earlier it is begun. This factor just alluded to is not adequate, however, to explain the great reduction in fatality obtained with the antitoxin.

ROUX'S analysis of his cases show very clearly that, as would be expected, the serum is far more efficacious in diphtheric anginas and croup which yielded pure cultures of the LÖFFLER bacillus than in those which gave in addition cultures of other pathogenic bacteria. The reports from private practice collected by WELCH, give a fatality percentage of only 6.9.

In a second table is shown the fatality in operated and non-operated cases of diphtheria treated with antitoxin. Of the 4,294 cases of this table, 27.2 per cent. required tracheotomy or intubation, the fatality in the tracheotomy cases being 39.8 per cent., in the cases of intubation 28.9 per cent., and in the cases of intubation followed by tracheotomy 53.8 per cent. Compared with previous statistics from the same hospitals, this means a reduction in fatality of tracheotomized cases of 34.1 per cent. since the introduction of the serum treatment—results that are strikingly favorable to the serum treatment. In the same way it is readily shown that the fatality of intubated cases is reduced 49.5 per cent. as the result of the antitoxic treatment. In connection with this, it is to be remembered that the great majority of observers bring testimony of the fact that the stenotic symptoms of laryngo-tracheal diphtheria are relieved without operation in a much larger proportion of the cases treated by antitoxin than by any other method. VON RANKE says that formerly 5 per cent. of his stenotic cases escaped operation, whereas now, 33 per cent. escape; of GANGHOFNER'S stenotic cases, formerly 12 per cent. escaped operation, whereas now, 21 per cent. escape.

In his third table, WELCH considers the ages of patients treated with antitoxin, and several striking contrasts are presented. Thus the fatality percentage for cases of diphtheria under 2 years of age, treated with serum is 33.3, while it varies 60 to over 80 per cent. for cases of the same age not so treated.

Table IV sets forth the fatality according to the day of disease upon which antitoxin is injected. Of 232 cases supposed to have been treated the first day, 5 died; the assumed duration of the disease is, of course, doubtful and in some of the fatal cases in this group the statements of friends and parents were apparently contradicted by the clinical signs and symptoms.

It is very noteworthy that the percentage of deaths in 814 cases, in which treatment was begun before the third day of the disease is only 5.5. According to this table the percentage of deaths in cases in which the serum treatment is begun on the third or fourth days of the disease is nearly three times greater than that in cases treated on the first and second day.

The essential harmlessness of the serum has been demonstrated by over a hundred thousand injections, and WELCH concludes that should the future show that through some idiosyncrasy on the part of the patient, death might be attributable to the serum, this would probably count for as much as the rare deaths from the use of ether or chloroform. The occasional untoward effects of the healing serum, such as erythema or urticaria, are annoying, but, being unattended with danger to life and without serious consequences, they do not contra-indicate the use of the serum.

The principal conclusion to be drawn from this able and timely article of WELCH'S is this; that the results of the treatment of over 7,000 cases of diphtheria by antitoxin demonstrated beyond all reasonable doubt that anti-diphtheric serum is a specific curative agent for diphtheria, surpassing in its efficacy all older methods. It is therefore the positive duty of the physician to use it.

WELCH concludes his study with saying that the discovery of the healing serum is entirely the result of laboratory work; that it is an outcome of the studies of immunity and that the discovery was in no sense accidental. "It should be forcibly brought home to those whose philozoic sentiments outweigh sentiments of true philanthropy, that these discoveries which have led to the saving of untold thousands of human lives have been gained by the sacrifice of the lives of thousands of animals, and by no possibility could have been made without experimentation upon animals."

THE PARASYPHILITIC NEUROSES.

Whatever the syphilographers may say, the opinion is growing among neurologic specialists that a number of disorders of the central and peripheral nervous system that have up to within a recent period been attributed to other causes, are, in the great majority of cases at least, to be considered as the late results of syphilitic infection. First among these are to be counted locomotor ataxia, which careful and reliable observers like ERB, DEJERINE, MARIE and others find to have been preceded by specific infection in at least 90 per cent. of all cases, and paretic dementia, which has, according to the latest reliable statistics of REGIS, SAVAGE, KOWALEVSKY, HOUGBERG and others a hardly less percentage of similar antecedents, and which MÖBIUS goes so far as to say will only be met with in those who have previously had syphilis. Then we have the special type of progressive muscular amyotrophy described by RAYMOND, which seems to be always preceded by syphilis, to say nothing of the large numbers of cases of neurasthenia, epilepsy, etc., that follow syphilitic infection at a more or less late period and for which no other rational etiologic factor can often be discovered.

All of these disorders are treated of by FOURNIER in a work ("*Les Affections Parasyphilitiques*," Paris, 1894,) that appeared last year, but that has not received quite all the attention it merits. The reputation of its author as a syphilographer, belonging rather to the camp of those who seem the less inclined, as a rule, to admit the connection of syphilis with these disorders, ought to give the work much more weight than would otherwise be allowed it, and the additional fact that he has frankly admitted a change of view from that formerly held by him should in no way disparage it. Perfect candor should be universal in science, but it is not yet so absolutely commonplace that it is unjustifiable to commend it. In matters incapable of accurate mathematical demonstration there is always room for a play of prejudice, for the selection of acceptable and the rejection of objectionable facts. It is perhaps in part due to this, that the acceptance of the syphilitic origin of these disorders is so limited as yet; syphilis is an objectionable disease and it is not satisfactory to have to attribute to it disorders that have heretofore been supposed to have other origins.

The arguments employed against this view are principally two; first, that the lesions of syphilis are absent; and, second, that the inefficiency of specific treatment is an evidence that the affections are not of a specific nature. The weakness of both of these is well shown by FOURNIER in his reference to the pigmentary syphilide, which is commonly reckoned among the tertiary manifestations, as a typical instance of a parasyphilitic affection. It is a little remarkable, however, that in his review of the evidence of the parasyphilitic nature of paresis, he lays no stress on the not infrequent phenomenon of conjugal paresis, husband and wife both affected simultaneously or in succession with the disorder, though, as is quite often the case, without any admission of syphilis by one or both parties. This common difficulty of obtaining the facts as to syphilis gives a special value to the statistics on which the belief in the parasyphilitic nature of these affections is based. As regards this particular disorder, it is safe to say, from common clinical experience, that the positive testimony invariably understates the facts. The fact that the lesions, so far as known of these conditions, are not syphilitic proves nothing, as it is only asserted that they are parasyphilitic, connected with syphilis, a remote consequence of the infection not

directly specific in its character. The nearness of the relations of syphilis to these disorders can be, however, at best, only an indefinite and unsettled question, like some others in regard to the later lesions of the disease.

It would be needless to enumerate all the arguments in favor of the views here stated, as they are too numerous and voluminous for the space at command. It is sufficient to say that they seem to be becoming more and more convincing to neurologic specialists.

It is not assumed that these affections, any more than the pigmentation or HUTCHINSON'S teeth are exclusively the result of syphilis—the same symptoms may arise from other causes, but this, it is held by the advocates of their parasyphilitic nature, must be considered as exceptional, and not the rule, as was heretofore held to be the case. Neither do these views exclude the participation of other causes beside syphilis in their production; were it otherwise there would be no way of explaining the increasing frequency of some of these disorders. But recognizing, as it seems possible we may have to, the infection of syphilis as their predominant primary cause, is to notably widen the range of responsibility of specific disease for human ailments.

THE BASLE ANTI-ALCOHOL CONGRESS.

There was recently held at Basle, Switzerland, the fifth annual session of the International Anti-Alcohol Congress, a temperance association which seems to be gaining in authority and influence. The late meeting was notable for the rather advanced position of certain prominent continental physicians who not only maintained the injurious action of alcohol, but proclaimed themselves as total abstainers, and the preponderance of the meeting's sympathies as stated by the London *Lancet's* correspondent, was evidently in favor of total abstinence. The temperance sentiment seems to be growing in Europe and to have perhaps its best support from scientific men of the highest rank as physicians and physiologists. It is especially among the alienist physicians that this appears to be the case, as is demonstrated by the discussions and papers in the leading psychiatric associations of France and Germany.

The movement takes, on the whole, somewhat different lines from that in this country; the use of the stronger alcoholic drinks is combated, while that of the lighter ones, wine and beer in their unadulterated forms, is countenanced and even upheld by many as an aid to the temperance reform. Still, as stated above, there seems to be a growing tendency to consider these also as hurtful and to favor more thorough restrictions of public sales of intoxicants, and even total prohibition is mentioned respectfully as a desirable if not an altogether practical ideal. The evils of alcoholic excesses are becoming more and more appreciable in many European countries, and this movement is in evidence of the fact.

This participation of some of the first physiologists and specialists in this work is one of its most satisfactory features, as it promises a fair scientific presentation of facts that can not be gainsaid as can some of the less well informed utterances of enthusiastic reformers in this country. The names of some of the members of the late Congress, FOREL, LANCEREAUX, LEGRAIN, GAULE, ROUBINOVITCH, among others are familiar to well informed physicians everywhere, and carry much weight.

One point of especial interest was the report made to the Congress in regard to the physiologic action of alcohol as shown by personal experimental investigations, by DRS. SMITH of Marbach, and FURER of Heidelberg. They found that the ingestion of a moderate quantity of alcohol, 40 to 80 grams, or 24 fluid ounces of wine of 15 per cent. alcohol strength, had a decided effect in retarding some of the simpler mental processes and physiologic reactions and that this was still determinable for several days after the dose.

There is certainly a large room for physiologico-psychologic studies of this special character, and these like the earlier ones of KRAEPELIN, we owe to the Heidelberg laboratory. They offer, as regards the effects of moderate doses of alcohol, almost the only means we have of obtaining reliable scientific data, and it may be will yet furnish the best arguments for the temperance reformers. It is easy enough to show that the excessive use of alcohol is hurtful, and with the liberal views of many of its users, much so-called moderation in its use is also often pathologically suspicious. But the actual harm of really small quantities is harder to demonstrate and if this can be done by the exact methods of the psycho-physiologist it will leave little to be said in favor of the indulgence of appetite on medical or scientific grounds.

OPPOSITION TO LIFE INSURANCE OF CHILDREN UNDER TEN YEARS OF AGE.

A two days' session of the sixth annual convention of Societies for the Prevention of Cruelty to Children in New York was held October 1 and 2, in the State Capitol at Albany. ELBRIDGE T. GERRY, ESQ., the President of the Societies, opened the session and delivered his annual address. A resolution was adopted that it was the sense of the convention that the practice of insuring the lives of children under 10 years of age, as at present conducted, is against public policy. It calls upon all those who are interested in philanthropic work to use all legitimate efforts to procure the passage of laws that shall prohibit a practice in this country that has proved so dangerous in other parts of the world. There can

e no question of the wisdom and propriety of this esolution, and medical societies everywhere should upport it.

THE HEALTH OF DOCTOR ROBERT BATTEY.

Our readers will be pleased to learn that a special elegram to this JOURNAL October 3, informs us that DR. BATTEY'S condition has much improved. The OURNAL OF THE AMERICAN MEDICAL ASSOCIATION was ot misled into publishing an obituary notice last eek on a statement in the Associated Press that our enerable friend was at the point of death. We tele-raphed our fellow-member, DR. GARLINGTON, and eceived an immediate response. The JOURNAL does ot anticipate facts in its desire to furnish its eaders with the latest news. That special function s the peculiar property of our distinguished critic, he *Philadelphia Polyclinic*.

DR. FRANCESCO VALLARDI.

We regret to announce the death of our distinguished confrère, DR. FRANCESCO VALLARDI, which occurred at Milan, September 18.

DR. VALLARDI was for many years the editor of the *Gazzetta Degli Ospedali e delle Cliniche*, a journal which has done its full share in the restoration of Italian medicine to its ancient vigor. As a journalist, DR. VALLARDI will be greatly missed, not only by the readers of the *Gazzetta*, but everywhere Italian medical literature is read.

CORRESPONDENCE.

The American Medical Association and Parliamentary Law.

SAN JOSE, CAL., Sept. 30, 1895.

To the Editor:—Now that the storms have passed which threatened the equanimity of the two last annual meetings of the ASSOCIATION, it may not be time spent in vain to consider, briefly, some of the parliamentary rulings which obtained at the two meetings mentioned. It is the duty of every man connected with societies and deliberative bodies to acquaint himself with parliamentary law, but especially is this duty incumbent on those who assume to preside over deliberative bodies, even a medical body, for there must be law, order and system in every deliberative assembly, that business may be facilitated and all members secured in their rights.

I have no doubt, as a rule, that the Presidents of our ASSOCIATION endeavor to conduct the business of our annual meetings, fairly, impartially and in accordance with their best ability. Perchance, occasionally a wrong parliamentary ruling is made deliberately to carry a measure in the direction of the President's bias. But either willfully or otherwise, usually otherwise, wrong parliamentary rulings are occasionally made at our meetings, and it is not at all unusual for these wrong rulings to be sustained on an appeal to the assembly, a large majority of whom are quite incompetent to pass upon a matter of this kind.

The presiding officer of the AMERICAN MEDICAL ASSOCIATION should know the law. There is no excuse for not knowing. Each President has one year's notice that he is to preside at a meeting of this great organization—time enough to commit to memory, four times over, Cushing, Roberts, and Smith's manuals of parliamentary law.

There should be no excuse for wrong rulings which may deprive any member of his rights or amenities in relation to the Society. No President has a right to dodge behind that old excuse, "I did the best I could—the best I knew." When such vast interests are at stake, there should be no mistakes in the plainest rules of parliamentary law.

To illustrate some of the defects which pertain to the ASSOCIATION in regard to parliamentary law and rulings, I will set forth a few facts. It will be recollected that for the past two meetings, amendments to the Code, Constitution and By-Laws have been prominently before the ASSOCIATION, and the fact developed that those opposed to amendments were not inclined to give those in favor of the same, a respectable hearing, even, at the meetings. Therefore tactics were resorted to, to cut off debate, as those opposing amendments were in large majority. But in these efforts to stifle everything and everybody favoring amendment, these parliamentarians (?) ran off the track several times, and in the last instance, at Baltimore, they remain in the ditch.

But let us notice the San Francisco meeting first.

Just a short time before the San Francisco meeting one of the most eminent members of the ASSOCIATION—one who was present at the organization of the same, and who has attended nearly every meeting from the organization to date, and one who is a stanch defender of the Code as it is, advised the ASSOCIATION how to dispose of the amendments and stifle debate as follows:

"If this eminently wise and judicious policy is to be adhered to, when the revised Code of Ethics is proposed . . . it will be subject to only two parliamentary motions; one to lay it on the table for action at the next annual meeting; the other, to postpone its consideration indefinitely, . . . *neither* of these motions would be debatable and the adoption of the latter would save much valuable time of the ASSOCIATION."

In accordance with the above advice, when the question of amending the Code came before the ASSOCIATION, some parliamentarian (?) moved to postpone indefinitely, thinking thereby to put a quietus on everybody—not knowing that that motion opened the whole question to the fullest debate.

The President lost no time in putting the motion, when the writer hereof interposed the point of order that the question was now open to full discussion. When this point was made the cry of no, no, no, was heard all over the house. The President hesitated, but drew forth his little Roberts' Manual and read the law which had not been clear to him before.

The Codeites were greatly excited about this time, lest some one might be heard in favor of amending the dear old document, so a new tack must be taken. Soon another bright parliamentarian moved to lay the motion to indefinitely postpone on the table, in order to cut off debate. This motion was put quickly and carried, and the parliamentary muddle was now of the most peculiar kind. A motion to indefinitely postpone was laid on the table. The maker of the motion and the majority of the convention, and probably the President supposed that the question before the house was securely tabled, but in fact it was yet before the house, as they had only killed the motion to indefinitely postpone. In this muddle the thing was left until at the afternoon meeting a motion was made and carried, to take from the table the question of amendments which had never been tabled. After these brilliant displays of parliamentary tactics, a motion to indefinitely postpone carried. Thus ended the first chapter.

Immediately following this indefinite postponement of amendments, Drs. Priestly of Iowa, and Quimby of New

Jersey, offered amendments to the Code, just such in part as had been indefinitely postponed. These amendments were properly admitted and placed on file for action at the Baltimore meeting. But lo! at Baltimore a new parliamentarian is in the chair and new and unwarranted rulings are rendered.

After postponing indefinitely all amendments to the Code, like amendments were again offered. The Chair ruled that it was out of order to offer like amendments to those postponed at this meeting. Herein he was wrong and everybody who sustained him was wrong. As I understand it, Dr. Priestly offered an amendment that was to lie over until next meeting according to the law. He had the right to offer amendments at that meeting couched in the identical language of the amendments postponed. He would have the right to re-introduce the same amendments at each meeting for the next forty years if they were defeated thus often. Re-introducing an amendment in this manner does not revive action at a given meeting on a matter that has been indefinitely postponed. There would be no action whatever taken on re-introduced amendments but to state the same to the assembly and place them on file.

The judgment of some of the members who so pertinaciously oppose any revision of the Code has been slightly warped, insomuch that they deem any tactics warranted, whether regular or irregular, in order to down "Banquo's ghost." One eminent member used the following unwarranted argument: "The *only way* in which subjects of the same character can be re-introduced at this meeting, after having voted for indefinite postponement, is to vote a reconsideration of the vote of postponement, and then we will get that before us." This argument was made against the re-introduction of an amendment by Dr. Priestly.

The language just quoted is correct parliamentary law when properly applied, but it was not applicable to the case in hand. A motion indefinitely postponed by a deliberative body is forever dead unless revived at that same session by a vote to reconsider. There being no vote to reconsider, carried, then the only method by which the same subject can be brought before the body, at a subsequent session, is by offering it anew, the same as on former occasions, and that can be done immediately in any case which must necessarily lie over to a subsequent meeting for action.

Possibly, since our parliamentarians are growing in knowledge, by next year it will be ruled that, when a question has been indefinitely postponed, it can *never* be revived or re-introduced. Who can tell? Cushing and Roberts "are not in it." Such decision would be a boon to the veterans who have assumed the task of handing down the creed to future generations just as it was delivered to the saints from the pen of the immortal Percival. They could then sleep in peace.

Let us have correct parliamentary rulings at the meetings of our Great AMERICAN MEDICAL ASSOCIATION.

A. C. SIMONTON, M.D.

Another Side of the Life Insurance Question.

LA FAYETTE, IND., Oct. 2, 1895.

To the Editor:—Allow me to call attention to the communication of Dr. John L. Davis, Medical Director of the Union Central Life Insurance Company, Cincinnati, which appears in the JOURNAL of September 23, page 524, in order to speak briefly in behalf of the members of the common herd in the profession who are interested directly and indirectly in the subject of professional work for life insurance companies. I am glad that the Doctor has discussed, in a public way, the practical side of the life insurance question in its relation to the medical profession; for I do not know of any one professional topic that needs it more.

The perusal of the Doctor's article gives me the impression that its author is only practically familiar with the whole question theoretically, and that his opinions and estimates of the local examiner have been affected, if not infected, by the gossip and statements of interested, and in some instances, of unscrupulous agents. Frequent meetings with examiners, socially and professionally, at varying intervals, has led me to believe that they do not exercise their powers of speech as frequently and freely in the interest of truth and a good all-round understanding as often and as thoroughly as they ought to, because they think it injudicious in a business way to do so; they are so dependent on the age for position and business.

As to the Doctor's paper. With his observations and statements as to the scope and purposes of a complete practice physical examination, I have nothing to say.

First, then, let me direct attention to the commercial phase of the subject and his statement, "that while physicians are receiving as fees from insurance companies and coöperative associations about $2,500,000 per annum, they are not in every instance giving a *quid pro quo*." The statement that the local medical examiner does not in *every* instance give an equivalent in work for the fee paid is, no doubt, true, but the paper would have been more instructive to all of us if it had stated what per cent. of examiners failed to furnish satisfactory reports of their work, or failed to do good valuable work, and specified wherein their reports were defective.

In view of the statement in the paper of the expenditure of such a large sum of money, I would like to ask what proportion of the $2,500,000 the Union Central Life Insurance Company pays its local medical examiners? What per cent. of this large sum of money goes to the local medical examiners and what to the medical director? As the late Dr. McIlvaine, of Cincinnati, would say: "Let us have the facts." Detached general statements, like the one cited, prove little if anything; they are unsatisfactory.

Since nearly all firstclass life insurance companies pay the examiner $5 for each applicant examined, and the Union Central, Dr. Davis' company, only pays $3, I think the citation in this connection against the local examiner is not altogether timely, if fair.

The local examiner frequently finds it a very difficult undertaking to "fully sympathize with the agent," when that individual makes himself a disagreeable visitor in his office as he sometimes does; or when he solicits, hints that his company wants, yes, expects him to take out a policy "with us," and to let the physical examinations of applicants pay the premiums; or when he objects loudly, offensively it may be, to the examiner's record of facts, etc., etc., in a given examination. As a class, solicitors for life insurance are gentlemen, but the most uncivil man I ever met in a business way was an agent for a life insurance company. If an agent is disagreeable or seeks to obtain an advantage for his company through the examiner, the latter is sure to come in for a share of abuse and misrepresentation, for the interests of the examiner and agent in the presence of a difference lie in widely divergent directions.

The defective work done for the Union Central Life Insurance Company by its local medical examiners is probably due, it seems to me, to the low fee paid by the company. Three dollars, the fee allowed for a complete physical examination of applicants for insurance with the company he represents, can hardly expect to secure firstclass professional talent, or if it does secure it, to expect it to exercise "the greatest tact and skill in drawing out and properly weighing every feature required for a perfect report." Is it natural to expect a qualified physician to be at all times "tactful and approachable, willing to display a sympathetic *camaraderie*, putting the applicant at his ease, and by his manner, if not by word, commend the applicant's motive in taking insurance, incidentally perhaps speaking well of the company and a good word for the agent?" "The examiner must honestly and earnestly believe in insurance and his company, and must fully sympathize with the agent in his difficult task." Can a firstclass physician do all this for each applicant and be accessible for such work at all times, and do it honestly for $3 and not sacrifice his dignity in some degree as a physician in Dr. Davis' estimation?

Knowing that his neighbor examiner receives $5 for an examination for his companies, the examiner for the Union Central Life Insurance Company feels that he is not fully appreciated, that the company takes an advantage of him, obliging him to work for less than he is worth, for less than the work is worth if it is done "honestly and earnestly." An old physician, independent, positive, original, told me

lately that he always gave the insurance company that brought an applicant to his office for examination for $1, one dollar's worth of work and no more; for $2 or $3, work in proportion to the fee and no more. Of course this remedy is impracticable, even dishonorable, and could not for a moment be held up as a rule of action against the wrong.

The AMERICAN MEDICAL ASSOCIATION has declared that the fee for each complete physical examination for life insurance should be $5, and not $3, as the Union Central Life Insurance Company obliges its local medical examiners to accept or go out of its service.

I have wondered if the above statements would not furnish a partial explanation, if not a complete one, of the discussion of "The Fool Doctor," by the underwriters of his company in convention; and if their discussion of this subject in his presence was not a mute appeal to him to employ at the customary rates, firstclass discreet physicians for local medical examiners.

Is not the fee for work for each applicant examined, that is, the *honorarium*, the mark and degree of business or professional esteem in which the examiner is held by the company? If Dr. Davis will look into the home office of his company thoughtfully and *judicially*, he will no doubt discover the chief cause of the ills which he describes so graphically in his paper, and which caused the agents to ridicule members of his profession; and, having discovered it, the remedy will readily suggest itself.

Finally, permit me to inquire if the small fees paid physicians for professional work nowadays by insurance and railroad companies are not one of the leading causes for the unsatisfactory social position of the medical profession in this country? Small fees, too, I think, has much to do in dividing medicine into many specialisms for gain, rather than for study or investigation, as well as creating the army of self-selected specialists, regulars as well as irregulars.

Yours respectfully, W. W. VINNEDGE, M.D.

Blood Poisoning—Alcohol.

ORAN, Mo., Sept. 30, 1895.

To the Editor:—To write a readable article on blood poisoning requires considerable medical knowledge and a very vivid imagination. Witness recent articles in the JOURNAL. Many maladies come within the scope of this heading. All contagious diseases (and many non-contagious). So does la grippe, malaria, pneumonia, etc. The field is large and there is much speculation along this line.

The ancient medical philosopher believed in blood contamination and wrote much in defense of his belief. To say that he drew largely on his imagination is to put it very mildly. The modern physician is in the same category. He believes in blood poisons, too, but he thinks it silly to say of him that he does not know exactly what he is talking about, when he uses the term. He can (so he thinks), point out the particular poison in each case. He calls these poisons, *germs*. And by the aid of his microscope and his imagination, he gives each germ its form and other characteristics by which it can be known. He will also, without being asked, tell you how these poisons originate, how they act, and how to get rid of them. But when he has a case to treat and reports results, it seems that it takes him just as long to relieve the case as it does one who does not claim so much and such wonderful knowledge. If driven from his position on the germ theory, he begins to talk learnedly of ptomaines and leucomaines; he will tell you that it requires an expert in the use of the microscope to discover and analyze germs, but that he is able to see and analyze the *debris* of these so-called disease producers.

One doctor insinuates that he, by examination of the urine, can tell what effect alcohol has had in a given case. Much is being written in condemnation of alcohol as a remedy. Why? Not because it is harmful as a *remedy*, but because it does so much harm as a *beverage*. Alcohol is condemned because it is not a "tissue-builder," not a "stimulant," not a "food," but a "paralyzer." Antifebrin is not a tissue-builder, nor a stimulant, nor a food, but a paralyzer. Chloroform, ether, chloral and a host of other remedies all belong to the same list. I see mercury is recommended for alcoholic rheumatism. I wonder if alcohol would not be good for mercurial rheumatism? Is mercury a tissue-builder, a stimulant, or a food? Neither, but a very useful remedy nevertheless.

Now to the subject again. Alcohol in large (poisonous) quantities poisons the blood, *en masse*. So does morphin, chloral, chloroform, iodin and a host of other poisons. The old-time doctor knew this, and he undertook by the use of the lancet to remove the blood and with it the poison. He also knew that poisons were removed from the system in gaseous form from the lungs, in fluid form from the skin and kidneys, and in solid form from the bowels—hence his frequent use of expectorants, diaphoretics, diuretics and purgatives. He also discovered that one poison would sometimes neutralize another, not because they were animals that would fight and destroy each other, as the modern writer would have us believe, but by a chemic process they were made harmless. The modern writer would do so much better if he "did not know so many things that were not so."

I wish to correct the writer who teaches that drunkards are made in the sick room. Most drunkards are such, long before they get sick. Alcohol is not being prescribed too much by the regular profession. Drunkards prescribe and use it for all kinds of maladies. It has a legitimate place in medicine. Its worst enemies among the profession admit that it is a pain obtunder. As such, it has few equals. It is transient in its effects in medicinal doses—is quickly thrown off from the lungs, skin and kidneys, promoting the action of each. In larger quantities it neutralizes other poisons and aids in ridding the system of them. Much of the good effect of fluid extracts is because of the alcohol they contain. Alcohol, as a remedy and a preserver of other remedies, has come to stay. I have no objection to the fight that is being made against intemperance—I am a total abstainer—but I shall prescribe alcohol whenever I think it is indicated; never for well people, but in all cases of sickness for which it is needed. The harmful effects so abundantly portrayed by writers for the JOURNAL, are those of drunkenness combined with starvation, vice, exposure and other calamities that befall the drunkard.

The reader will do well to look after *excretion* in all cases where the blood is contaminated. Do not forget the known antidotes, and do not believe everything you see written in the JOURNAL. It is much easier to guess than to know, and writers are too much given to telling plausible stories not founded upon facts. The germ theory, with all its concomitants, has got to go. It has been "weighed in the balance and found wanting." Its adherents, like those of the lancet, will have to take a back seat.

Respectfully submitted, W. P. HOWLE, M.D.

New York Pasteur Institute.

NEW YORK, Oct. 1, 1895.

To the Editor:—In perusing the JOURNAL for August 10, I find an account of a visit to the Pasteur Institute of Paris, by Dr. Casey A. Wood, in which he writes, on page 250, as follows:

"By the way, Chicago is the only Pasteur station except, I believe, Havana and New Orleans, marked on the large map of America at the Institute. I could not discover why New York, with Gibier's station had been omitted."

Will you allow me to remark in answer to this note that when the map above mentioned was made, there was no station either in Chicago or New York, but at the Pasteur Institute it had been said that a station was going to be started in Chicago. For some reason or other, no institution was started at the time in Chicago, but a special mark was made on the map indicating that there was a station there. It was only about two years later that I started the Institute in New York, and six months afterward Dr. Lagorio started another in Chicago, but since, no change has been made on the map. However, to avoid any comment on this matter, I hope that the Directors of the Paris Institute, to whom I have submitted the facts, will make the necessary addition upon this map. Yours truly, PAUL GIBIER.

It was Dr. Fish, and not Dr. Burgess.

MILWAUKEE, WIS., Oct. 5, 1895.

To the Editor:—In your issue of the 5th inst., you state on page 578 that Dr. A. J. Burgess of Milwaukee said "so-and-so." These remarks, abbreviated though they be, were mine. I believe I am the only Fellow of the American Association of Obstetricians and Gynecologists in this State—and at least the only one present at this discussion. I most decidedly object to your quoting some one else for me, or your attributing remarks to me made by another.

Yours truly, E. F. FISH, M.D.

The McDowell Biography.

NEW ORLEANS, Oct. 4, 1895.

To the Editor:—Some time ago, over one year, a lady came to my office soliciting subscriptions to the biography of Ephraim McDowell, M.D., claiming among other things, that she was a distant relative of the Doctor. I find my receipt for the price of said book, but no book yet. I do not believe the Doctor would approve of such slow treatment or action. As I have not her address, and I noticed some time since you had, would you kindly send this to her, or to those in charge of publication, and oblige, S. L. HENRY, M.D.

Some Recent Comments on the Journal.

THE OPINION OF AN OLD MEMBER.

LE MARS, IOWA, Sept. 8, 1895.

To the Editor:—Your publication of letters on the line of "What I know about the JOURNAL," is correct, and some of the criticisms are good. There is an abundance of medical periodicals of the "featherweight" variety in existence, such as would suit quite a sprinkling of our profession, but for physicians who are eligible to membership in the AMERICAN MEDICAL ASSOCIATION, a journal like ours is not too scientific or too heavy. If all those who now disagree with me will but read the JOURNAL for a few months, they will soon feel the necessity for that class of medical literature. A page or two each week of light practical reading, as suggested by Dr. Towler, would certainly not be considered amiss by any one, and might make the JOURNAL more popular with some. As long as we have our editor to act as sifting committee, there will be no danger of articles finding their way into the JOURNAL which would make it a laughing stock to the profession or to other periodicals. I have in my library every issue of our JOURNAL, from No. 1 to the present, and could not spare a single number. PAUL L. BRICK, M.D.

FROM A HEALTH OFFICER.

WOOSTER, OHIO, Oct. 1, 1895.

To the Editor:—What seemed more than an herculean task a few months since—and it was even doubted whether it could be done—the editing of the JOURNAL, is now grandly accomplished. The JOURNAL to-day is the best educator the profession in America has ever had.

Glance over the articles it has contained for three or four months last past! Many of them are exhaustive on the subjects they discuss, and some bring to light new truths of great value to the profession.

Accept my congratulations for your past success and my earnest wishes for your future usefulness. Fraternally,

JOSEPH E. BARRETT, M.D.
Health Officer.

HE COMPLIMENTS THE JOURNAL.

COLUMBUS, OHIO, Oct. 5, 1895.

To the Editor:— . . . Permit me to compliment you on the JOURNAL in general, and particularly on your editorials. The editorial of two weeks ago on Basedow's disease I think especially good. While you did not solve the secret of the etiology and seat of that mysterious malady, you presented all that is known in a condensed and scholarly manner.

STARLING LOVING, M.D.

DR. QUIMBY'S OPINION.

To the Editor:— . . . As time rolls on, our JOURNAL grows in value and importance, and if no obstacle is thrown in the way, is destined to be one of the greatest medical lights and journals of the age. I. N. QUIMBY, M.D.

NECROLOGY.

JOSEPH C. GORDON, M.D., of Mt. Vernon, Ohio, October 2, aged 54. He was born in Chester County, Pa., and went to Knox County, Ohio, in 1853. He served through the Civil War in Company A, 20th Regiment O. V. I., and was prominent in Masonic circles.——Wm. H. Gibson, M.D., of Chariton, Iowa, October 3.——E. P. Gaylord, M.D., of Alameda, Cal., September 27, aged 61. He was formerly from New York and had lived in Alameda nearly three years.——F. M. Everett, M.D., of Corydon, Iowa, September 29, aged 65.——James Collins, M.D., of Philadelphia, October 7.

PUBLIC HEALTH.

Pollution of the Passaic River, New Jersey.—According to the *Sanitarian* for August, the health authorities of Passaic, N. J., have passed resolutions declaring that the pollution of the Passaic River by sewage and manufacturing refuse from the cities of Passaic and Paterson has reached the danger point. Every summer, City Physician Terhune says, there is an epidemic of malarial fevers among the residents along the river and the Dundee Canal, which the river supplies. The board called on the two cities to take steps to diminish pollution. The board advocates the building of a trunk sewer from Paterson to the sea.

Cost of Cremation in New York.—The charge for cremating the body of an adult in New York city is $35 and for that of a child $25. Urns or vases vary in price from $6 to $45; the former are of bronze and white metal, the latter of serpentine stone, marble, etc. For $25 a niche may be bought in the crematory where the urn will be cared for, or it may be taken possession of by the family. About one-half are said to be kept at the crematory; some are taken away and placed in safety deposit vaults and others are kept among the most sacred treasures of the home. A newspaper report has it that one relict carries the ashes of her deceased husband wherever she goes—to Europe and back several times and frequently to the seashore and mountains. It is not stated what rate of fare is charged for the "remains."

The New York City Board of Health's New Regulations.—The New York Board of Health has adopted rules for the prevention of the spread of contagious diseases among public school children. These rules decree that slates and slate pencils shall be abolished, and pens and pencils substituted, the latter to be kept in separate boxes by each pupil. All the school property of a child ill with a contagious disease shall be turned over to the health board. Books that are taken home shall be re-covered with brown paper once a month. Each class must have its own covered pitcher for drinking water, and each pupil a separate cup. In cases of contagious disease in a family, the children are at once to be excluded, and teachers are to report weekly to the board the names and conditions of pupils who are ill. All teachers and principals shall be forbidden to send any pupil to the home of another pupil for any reason. Circulars of instruction to the Board of Education on those matters, and also to principals, are in the course of preparation.

Another Attack on American Live Stock.—A London cable dispatch of the 5th inst., reports that the English agricultural papers are raising an outcry against the free admission into Great Britain of American sheep. A recent consignment of sheep from America was found to be suffering with scab, the spread of which disease in the United Kingdom is due, according to the *Live Stock Journal*, to the importation of sheep from the United States. Many of these sheep were dispersed over the country for grazing and they spread the disease. The paper says that the Board of Agriculture must therefore be asked to issue an edict, similar to that applied to cattle, providing that American and Canadian sheep shall be killed at their port of landing. Secretary Morton will investigate the foundation for the charge, which will probably be found to have its origin—as in other legislation hostile to American food products—in purely commercial reasons and not in any keen concern for the public health.

Dr. Dana on the Saddle.—Upon what shall the rider sit? With all the world a-wheel this is certainly a question fundamentally touching the public health, and our esteemed confrère, Dr. Charles Anderson Dana of *The Sun*, who has so long been in the saddle in more than one sense, discusses it in his usual profound and instructive fashion. Especially is he concerned about the proper saddle for women. He points out that in this feature of the bicycle's construction the pommel is high, it interferes with the dress and chafes the body, and if this part is tilted downward one slides forward on to the narrow shank of leather and the comfort of wheeling is destroyed; stout women condemn the narrowness of most saddles, while many of less weight object to a seat of more than ordinary width; out of fully a score of saddles that are satisfactory to men, not one is pronounced good by the mass of women; not one, they say, is adaptable by any possibility to woman's structure; in short, while the saddles of to-day suit wheelmen, they positively do not suit wheelwomen, and hence they must be condemned. Dr. Dana then proceeds to consider the essentials of a perfect bicycle saddle for either man or woman: 1, one that shall maintain the body in an easy and proper position; 2. one that shall afford the rider a firm, yet elastic, seat; 3, one that shall allow pedaling without needless friction. The cycling sisterhood do not demand a saddle with upholstered arms in which to recline at will, but one conforming to their bodily requirements, and from which the machine may be propelled with facility and comfort. "In these days of reform will not," he asks, "some one of our fair readers with masculine ingenuity and feminine sense of personal comfort, invent a reformed bicycle saddle? We shall hail the advent of so important a factor to our sisters seeking health and pleasure on the wheel."

A Report on Malarial Fever in New Jersey.—According to *Public Health*, August, Dr. J. C. Smock, the State Geologist for New Jersey, has summarized the facts as to the origin and means of preventing malaria in New Jersey under the following heads: 1, malarial fevers prevail over that part of the State which lies north of the terminal moraine, wherever the conditions are favorable to it; 2, there is a remarkable absence of malaria in the country south of the terminal moraine, excepting localities and districts of limited extent, where aggravated conditions of its determination exist; 3, the existence of malaria is not necessarily due to a geologic formation, but to a sub-surface condition, common in the country which is north of the terminal moraine, and covered more or less by glacial drift; 4, the element of imperfect or disturbed under-drainage is a more potent condition in determining malaria than any other; 5, the thorough under-draining of a district or tract is the most practicable and most effective means in order to amelioration and protection; 6, the distance to which the malarial poison may be carried by winds or air currents is comparatively short, and not over hills and mountains miles away, as often popularly stated; 7, belts of forests, and even hedges, tend to arrest this conveyance of malaria by winds. One instance was cited where, in the northern part of the State, a hedge is reported to have prevented malaria. The hedge was cut down and the whole family was taken sick with malarial disease. The occurrence of malaria or its distribution areally in New Jersey seems to be explained by these conditions of sub-surface drainage and the essential factors of heat, moisture, and dead vegetation, and not by wind transmission, otherwise there would be greater uniformity in the occurrence, instead of the irregular distribution. We have here a fever-stricken locality, and there an area free from it. Referring to the Great Meadows of the Pequest Valley, in Warren County, the testimony of intelligent laymen there resident led the writer to believe that there is no malaria there. Formerly this valley was "full of it;" as one said, "nearly every one had the shakes." The beneficial effects are attributed to the lowering of the bed of the Pequest River and the more rapid delivery of its waters. Where formerly were wide-spread inundated lands and a sluggish stream with scarcely a perceptible current, there are to-day productive gardens and a swift current. The possibility of future outbreaks was suggested by the writer, until the whole tract has its ground-water lowered sufficiently to make a well-drained soil and subsoil, as well as a thorough surface system of drainage.

Health Reports.—The following health reports have been received at the office of the Supervising Surgeon-General, Marine-Hospital Service:

SMALLPOX—DOMESTIC.

Louisiana: New Orleans, September 21 to 28, 11 cases, 1 death.

Michigan: Smallpox reported at Battle Creek, Battle Creek Township, Bedford Township, and Detroit.

Nevada: Carson, September 15 to 17, 15 cases.

SMALLPOX—FOREIGN.

Cairo: September 3 to 9, 2 deaths.
Calcutta: August 17 to 31, 2 deaths.
Buenos Ayres: July 1 to 31, 24 deaths.
Barcelona: August 1 to 31, 8 deaths.
Dublin, September 14 to 21, 5 cases, 1 death.
Gibraltar, September 8 to 15, 1 case.
London, Eng.: September 14 to 21, 2 deaths.
Montevideo: August 3 to 10, 1 case; August 17 to 24, 4 cases, 1 death.
Naples: September 14 to 21, 3 cases, 3 deaths.
Odessa: September 7 to 14, 1 case.
Prague: September 7 to 14, 2 cases.
Rio de Janeiro: September 3 to 10, 81 deaths.
Tuxpan: September 7 to 14, 3 deaths.
Warsaw: September 1 to 14, 2 deaths.

CHOLERA.

India: Bombay, August 27 to September 1, 3 deaths. Calcutta, September 17 to 31, 17 deaths.

Tangier: September 15 to 21, 79 cases, 46 deaths.

Austro-Hungary: Tarnopol, September 3 to 9, 14 cases, 5 deaths; Tarnopol District, September 2 to 9, 3 cases, 1 death; Brody District, September 1 to 2, 1 case, 1 death; Rohatyn District, September 2, 4 cases, 4 deaths.

France: Paris, September 1 to 7, 1 case, "choleriform affection."

Russia: Volhynia Government, August 4 to 10, 1,004 cases, 322 deaths; August 11 to 17, 2,025 cases, 718 deaths; August 18 to 24, 2,497 cases, 944 deaths; August 25 to 31, 3,352 cases, 1,190 deaths.

Cases are also reported from districts of Ostrog, Kremenetz, Saslow, Starokoustantinow, Nowogradwalyuski, Dubno, Rowno, Luzk, Shitonir and Kowel.

Turkey: Aleppo, August 21 to September 4, 35 cases, 13 deaths; Brussa (city), August 29 to September 1, 38 cases, 37 deaths; Brussa (vilayet), August 24 to 30, 32 cases, 16 deaths; Diabekir (vilayet), August 24 to September 1, 77 cases, 77 deaths; Adana (vilayet), August 23 to 27, 1 case, 2 deaths.

Japan: April 18 to 30, 99 cases, 28 deaths; May 1 to 31, 665 cases, 514 deaths; June 1 to 30, 3,573 cases, 1,931 deaths; July 1 to 31, 7,575 cases, 4,891 deaths; August 1 to 2, 810 cases, 553 deaths.

YELLOW FEVER.

Cuba: Cienfuegos, September 22 to 29, 3 deaths; Havana, September 19 to 26, 70 cases, 22 deaths; Sagua la Grande, September 14 to 21, 4 cases, 1 death.

Mexico: Vera Cruz, September 19 to 26, 4 deaths.

Brazil: Rio de Janeiro, September 3 to 10, 7 deaths.

MISCELLANY.

Addresses Wanted.—Dr. F. Meyer, JOURNAL returned from Baltimore, Md. Dr. M. Perl, JOURNAL returned from Houston, Tex. Dr. L. Smith, JOURNAL returned from Chattanooga, Pa.

South Dakota Blind Asylum.—The Legislature has established an institution to be known by the foregoing name and located at Gary, in Deuel County. The State Board of Charities and Corrections are to have charge of it and of the employment of superintendent, attendants and instructors.

Massachusetts Pharmacy Laws to Be Codified.—A resolution was passed by the General Court, or Legislature, of Massachusetts, providing that the board of registration in pharmacy cause to be codified, consolidated and arranged, all laws now in force relating to the regulation or practice of pharmacy, and all laws which it is the duty of the members of the board of registration in pharmacy to enforce. Such codification, consolidation and arrangement shall be reported to the general court on or before Jan. 1, 1896.

Anti-American-Alliance Serum.—The epidemic that is carrying off so many of the English titled "eligibles," who fall a ready prey to American beauty and bullion, leads London *Truth* to offer this delusive hope to the British matron with daughters of her own to marry off: "After years spent in laborious and learned research, Prof. Padmore Brown claims to have discovered a serum, a hypodermic injection of which will preserve young men of position against marrying Americans. If the serum really possesses the property which the Professor declares it has, this will undoubtedly be one of the most important discoveries of the century. No mother with eligible daughters and no unmarried woman would, in that event, ever be without one of the hypodermic syringes filled to the nozzle with anti-American-alliance fluid."

Provision Made for North Dakota Blind Asylum.—The Legislature of North Dakota at its last session established a blind asylum, to be located at Bathgate, that State. The government thereof is vested in a board of five trustees, to be nominated by the Governor and confirmed by the Senate. The 30,000 acres of land donated by Congress for the purpose of such blind asylum and appropriated by the constitution of the State for it, and all moneys received from the interest and income derived from the sales of such lands or rents derived from the leasing of such lands, are appropriated for the construction and maintenance of this asylum.

Synthetic Alcohol.—Now that acetylene can be made industrially upon a cheap scale, the question of preparing alcohol synthetically is again being agitated. Indeed Caro (*Pharm. Centralb.*), while finding previously published methods insufficient, claims to have devised a process which eventually may lead to the desired results. He passes acetylene through concentrated hydriodic acid, thereby obtaining nearly 60 per cent. of CH_3CHI_9. This, when boiled with concentrated solution of potassium hydrate, yields alcohol, acetylene and potassium acetate.—*Western Druggist.*

Methyl Salicylate in Senega Root.—Rubner having noticed (*Pharm. Jour.*) that a certain sample of senega root had a distinct odor of gaultheria, attributed this to sophistication, but Goldener states that, under certain conditions, many plants of the polygalaceæ contain methyl salicylate, and therefore the supposed adulterant is a natural constituent of the root. C. Dunnenberger points out that the Swiss pharmacopœia has adopted the salicylic acid in senega root as a test of identity, thus asserting its existence as a normal constituent of the root.—*Western Druggist.*

Society Notes.

THE annual meeting of the Minnesota Academy of Medicine was held in St. Paul, October 2. The following officers were elected for the ensuing year: President, A. E. Senkler, St. Paul; Vice-President, W. A. Jones, Minneapolis; Secretary, R. O. Beard, Minneapolis.——At the annual meeting of the Tri-State Medical Society held at Des Moines, Iowa, the following officers were elected: President, D. C. Babcock, Chicago; First Vice-President, A. H. Cordier, Kansas City, Mo.; Second Vice-President, W. A. Todd, Chariton, Iowa; Secretary, Geo. Cole, St. Louis. The next meeting will be held in Chicago.——The first annual meeting of the Utah State Medical Society was held in Salt Lake City October 1, under the presidency of Francis L. Bascom.——The Utah County Medical Society was organized in Salt Lake City September 28. The following officers were elected: President, W. E. Pike; Vice-President, M. H. Hardy; Secretary and Treasurer, F. W. Taylor.

Cleveland Notes.

THE students of the junior class in the Medical Department of the University of Wooster at Cleveland have organized a "Pathological Journal Club," which has for its chief object an instruction in the methods of literary research by bringing the students into contact with the current literature bearing upon pathology and bacteriology in connection with their required class-room and laboratory instruction in these subjects.

At the first meeting of the club, held Thursday evening, October 3, Mr. Morris Schott read his detailed translation of a paper upon "The Etiology of Rheumatic Tetanus," by Carbone and Perrero, which appeared in the *Centralblatt für Bakteriologie* of August 31, 1895; Mr. J. J. Fleming read an abstract of "Notes on Bacillus Coli Communis and Related Forms," by Theobald Smith, from the *American Journal of the Medical Sciences* for September, 1895; and Mr. R. G. Schnee gave an abstract of an article by E. O. Jordan, "On some Conditions affecting the Behavior of the Typhoid Bacillus in Water," from the *Medical News* of Sept. 28, 1895.

The club elected Dr. A. P. Ohlmacher president, and Mr. A. L. Smith secretary. The meetings will be held bi-weekly.

Louisville Notes.

G. A. R. REPORT.—The report of the Medical Director, Dr. W. H. White, of the workings of his department during the National Encampment of the G. A. R. has been submitted to the Citizens' Committee. The workings of the department have been recorded in these columns previously. Reports were returned each day by the various chairmen in the different wards, giving the name, residence, post, disability, where quartered and what disposition was made of the patient. From these reports it appears that 284 cases were cared for; 98 of these occurred during the grand parade day, being prostrations from the excessive heat. It is a great wonder that many more of the old veterans did not succumb, as the thermometer reached the 98 degree mark, and the sun beat down from a cloudless sky. Thirteen were cared for at the fireworks, mostly bruises from an accident to the seats erected on the river front; and thirty were prostrations at the barbecue. The expenses of the medical department amounted to $556.93, quite a balance being left over from the liberal allowance made by the Board of Control. It is gratifying to announce that not a single death occurred during the Encampment, and not a single case of serious sickness or injury among the veterans occurred. A most deplorable accident was that which befell the members of the Louisville Legion. A squad of men were placed in charge of a gun which was to fire the salute of welcome. While proceeding to the selected site, the caisson exploded, and three of the Legion men were killed, and the negro driver. They were almost blown to pieces, and beyond recognition.

NULL.—Dr. C. W. Null died at the City Hospital on the 26th inst. He was 42 years of age, having come to Louisville from North Carolina. He secured a position as janitor of the Louisville Medical College, and at once began the study of medicine, graduating in due time, and shortly after being elected to the professor of physiology. Later, he lectured on materia medica. At this time he began to drink, his fall was as rapid as his rise, and he was taken from a saloon, unconscious, to the City Hospital, where he died.

LOUISVILLE ACADEMY OF MEDICINE.—The regular meeting

this society was held in the Academy rooms Monday even-
, September 30. The subject for discussion was "Texas
ver," introduced by a paper by Dr. Cashin.

DEATH REPORT.—The total number of deaths for the week
ding September 28 was 72; 41 male; 56 white; 4 died at
City Hospital; 3 stillbirths; 10 deaths from typhoid
er, 6 from inanition and 6 from cerebral meningitis.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The President of
is Association, Dr. Wm. Bailey, accompanied by Drs. W.
Rodman, J. M. Mathews, President of the State Board of
alth of Kentucky, and Dr. Carl Weidner, attended the
eeting at Denver on the 28th ult.

KENTUCKY SCHOOL OF MEDICINE.—The catalogue of this
hool for the session 1896 is just out, and shows the follow-
g new appointments upon its staff: Dr. J. W. Guest,
sistant in gynecology and abdominal surgery; Dr. Wm. P.
nta, assistant in the laboratory of surgery; Dr. Gavin
lton, assistant in physiology; Dr. Florence Brande, as-
tant in clinical medicine; Dr. Henry H. Koehler, assistant
clinical medicine. Dr. Carl Weidner became associate
ofessor of the practice of medicine, and director of the
boratories of histology, pathology and bacteriology; Dr.
enry E. Tuley is made an instructor of physical diagnosis,
addition to his charge as chief of medical clinic. The
ection of Dr. S. E. Woody as Dean was mentioned in a
evious issue.

St. Louis Notes.

HEALTH OF THE CITY.—The mortuary report for the week
nding October 5 gives 172 deaths, 10 less than during the
receding week, and 29 more than in the corresponding
eek of 1894. Death rate, 16 per 1,000. There were 27 deaths
nder the age of 1 year; 48 under the age of 5; 27 deaths
ere due to zymotic diseases. During the week 121 cases
diphtheria and 6 cases of croup were reported, with
deaths; 8 cases of scarlatina without mortality; 11 cases
typhoid, with 2 deaths; and 1 case of measles. The prev-
lence of diphtheria is still causing alarm, and the public
eems more alive to the need there is for a strict compliance
ith the instructions of the Board of Health.

THE ST. LOUIS MEDICAL SOCIETY.—At the meeting of Octo-
er 5, Dr. Sherwood Dunn, late of Pozzi's clinic, demonstra-
d Professor Richelot's operation for vaginal hysterectomy
o an appreciative audience.

FREE DISPENSARY ABUSES.—The city has opened a branch
ispensary, and *apropos* of this extension of facilities for med-
al aid, there is renewed discussion of the abuse of this privi-
ge of charity. Plans are proposed looking to the restric-
ion of this charity in the case of the city dispensaries, which
re easy of accomplishment, but the abuse of free college
linics is not so easily reached. The college is anxious to
btain a sufficiency of clinical material, and is never discrim-
native in its acceptance of cases. The multiplication of
olleges in the city has greatly increased the number of free
linics, and it has now become notorious that a large pro-
ortion of the cases seeking aid in them are persons coming
rom both city and country who are able to pay. It is to be
oped that the State Board of Health will hit upon some
lan to curtail this evil, which harms the profession quite as
uch as a superfluity of its own members.

THE MISSOURI MEDICAL COLLEGE.—Tuesday, October 1, the
ew college building was turned over to the trustees, and
edicated with ceremony. The new building is situated on
efferson Avenue, near Washington, and adjoins the old
olyclinic. "The building is faced with white limestone, de-
igned in the classic style of architecture and is most deli-
ate in all its details. At the entrance two lamps of bronze,
et on pedestals, give a most artistic effect. In the base-
ent are located the boilers, heaters, and electrical plant.
he system of heating and ventilating introduced forces the
eat throughout the building. The sanitary system is one of
he most important features in a building of this kind and
as been handled in a most satisfactory manner. On enter-
ng the building the spacious hall connects with the rooms, clinic rooms and a spacious lecture hall. The surgical amphitheater is located in the adjoining building with easy access from main hall. The second floor contains the biologic laboratory fitted up so that each student has his table with lockers. Connecting are the professors' rooms. The main amphitheater, with a seating capacity of 300, is located on this floor, with a large stage; connecting with the stage are large compounding rooms and smaller laboratories. On the third floor is located a large well lighted reading room, the pathologic, bacteriologic and physiologic laboratories. The professors' gallery runs the entire length of the rooms and so located that each student has full view of his doings. The dissecting hall is located on the fourth floor, with cement floor and all necessary drains and lighted with an immense skylight.

THE DUESTROW CASE.—The prosecution of this insane uxoricide is still conducted with a zeal worthy of a better cause. The latest move of the prosecuting attorney is the announcement of an intention to attempt to obtain an indictment for murder in the first degree before the St. Louis grand jury. This is the result of the failure to obtain conviction in the August trial in Franklin County. To further prejudice the public, the prosecution conducted a farcical examination in Franklin County with a view to unearth bribery of the jurors who served at the last trial. It is a sad commentary upon the administration of justice to realize that the public prosecutor has it in his power to affect the course of the law by cunningly playing upon popular opinion. There is an outspoken determination to compass the legal execution of Duestrow, sane or insane.

Washington Notes.

ANNUAL REPORT OF THE HEALTH OFFICER.—The annual report of the Health Officer shows the total number of deaths during the last fiscal year was 5.565, of which 3,114 were white and 2,451 colored. The death rate was 16.97 per 1,000 white inhabitants and 28.18 per 1,000 colored, and 20.57 per 1,000 of the entire population. The decrease in deaths was 474. The deaths from zymotic diseases numbered 1,036, as against 1,398 the preceding year. There were 4,794 returns of births made during the year, of which 2,378 were white and 1,916 colored. The births fell short of the deaths by 771. Estimated from the increase of population, probably 5,000 births were not reported, although required by law. It is gratifying to note, continues the health officer, that at no previous time for twenty years was the death rate so low. The marriages reported were 2,391, as against 1,496 the year before. Of these 1,411 were white and 980 colored. The estimates appended for the expenses of the fiscal year is as follows: One health officer, $3,000. One chief inspector, who shall be a physician and act as deputy health officer, $1,800. Fifteen sanitary and food inspectors at $1.200; $18,000. One sanitary and food inspector, who shall be a practical chemist, and inspect dairy products, $1,800. One sanitary and food inspector to assist chemist, etc., $600. Two sanitary and food inspectors, who shall be veterinary surgeons, and act as inspectors of live stock, dairy farms, etc., at $1,200; $2,400. One inspector of marine products, $1,200. One chief clerk and deputy health officer, $1,800. One clerk, $1,400. Four clerks, two of whom may also act as sanitary and food inspectors, at $1,200; $4,800. One clerk, $1,000. One messenger and janitor, $600. One poundmaster, $1,200. Laborers at not exceeding $40 per month, $1,920. Ambulance driver, $480. For rent of office and stable, $1,120. For support of chemic laboratory, $1,000. For the collection and disposal of garbage and dead animals, $57,000. For the prevention of the spread of scarlet fever, diphtheria and other minor contagious diseases, including the establishment and maintenance of a bacteriologic laboratory and disinfecting service, to be immediately available, $15,000. Contingent expenses, $4,000. For the erection of an administration building, isolation ward, stable, mortuary and discharging room in connection with the smallpox hospital, and for the equipment of these buildings and of those already erected, $15,000. For the relief of the poor—twenty physicians to the poor, at $480 per annum, $9,600; drugs, printing, etc., $3,700.

COLUMBIA HOSPITAL DISPENSARY CHIEF.—The executive committee of the Board of Directors of the Columbia Hospital have appointed Dr. Lewis P. Smith chief of the dispensary service.

ANNUAL REPORT OF THE CORONER.—Dr. Chas. M. Hammett, coroner of the District, has presented his annual report for

the past year. He makes an urgent appeal for the erection of a new morgue, and asks that $12,000 be appropriated for that purpose. The new one in Baltimore cost $4,500, and so the coroner estimates $5,000 for the site, $4,500 for the building, and $2,500 for its equipment.

THE WASHINGTON BOARD OF TRADE.—At the meeting of the Board of Trade this week, the principal matters discussed were the means of prevention of the spread of typhoid fever and the extension of the sewer system of the District.

MEDICAL EXAMINATIONS OF PHYSICIANS TO THE POOR.—The medical examining board of the District Government held its first examination on the 5th inst. to fill vacancies in the staff of physicians to the poor. Twenty-five applicants were examined. Ten vacancies will exist on December 15 next. The names of the successful candidates will be announced later.

GEORGETOWN MEDICAL COLLEGE.—The chair of surgery has been divided. Deputy Surgeon-General Forwood, U. S. A., has consented to give a number of lectures upon such portions of military surgery as will prove of decided interest to the general surgeon. He will also treat of surgical pathology and the technique of operations. Word has just been received from Prof. Ernest La Place, in response to an invitation, that he will lecture on brain surgery. Dr. Snyder, of Garfield Hospital staff, has been elected an additional professor of surgery. Dr. Snyder will also lecture at the college upon surgery.

Dr. John W. Bayne, attending surgeon to Providence Hospital, will this year lecture on theoretical as well as clinical surgery. Dr. Devereux has been elected lecturer on "minor surgery," and will continue his efficient instruction in bandaging and fracture dressing, which made last year's course in practical surgery such a success. Dr. George M. Kober, late of the United States Army Medical Corps, has been elected professor of hygiene and military surgery. As an acknowledgment of his ability in hygiene the honorable Commissioners of the District have selected him for the important post of special sanitary inspector to study the cause of the recent epidemic of typhoid fever.

The faculty has created the chair of diseases of infancy and children. To this professorship they have elected Dr. S. S. Adams. The didactic course which he will give will be illustrated by bedside instruction at the Children's and Washington Hospital for Foundlings.

The facilities for clinical medicine have been augmented by the election of Dr. T. N. Vincent as professor of clinical medicine. He will lecture at Providence Hospital. The clinical professors will add to their usual clinics at the appointed hours instruction at the bedside by ward classes. To these facilities for clinical instruction additional opportunities will be furnished by other members of the medical staffs of Providence and Emergency Hospitals, as well as the Eastern and Women's Dispensary.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from September 28, 1895, to October 4, 1895.

Capt. Eugene L. Swift, Asst. Surgeon (Ft. Yates, N. D.), is granted leave of absence for one month, to take effect when his services can be spared, with permission to apply for an extension of one month.

Lieut.-Col. Joseph R. Gibson, Deputy Surgeon-General, will report in person to the president of the Army retiring board at Washington Bks., D. C., at such time as he may designate, for examination by the board.

Capt. Guy L. Edie, Asst. Surgeon, is relieved from duty as assistant to the attending surgeon, in the city of Washington.

First Lieut. Frederick P. Reynolds, Asst. Surgeon, is relieved from duty at Ft. Sam Houston, Texas, and ordered to Ft. Clark, Texas, for duty, relieving Capt. Benjamin L. Ten Eyck, Asst. Surgeon, Capt. Ten Eyck, on being thus relieved, is ordered to Columbus Bks., Ohio, for duty.

First Lieut. William W. Quinton, Asst. Surgeon, will be relieved from temporary duty at Ft. Logan, Colo., to take effect upon the arrival there of Capt. W. W. Johnson, Asst. Surgeon, and ordered to Ft. Riley, Kan., for duty.

Lieut.-Col. John S. Billings, Deputy Surgeon-General, having served over thirty years in the Army, is on his own application and by direction of the President, retired from active service this date, Oct. 1, 1895.

First Lieut. Frank T. Meriwether, Asst. Surgeon, having been found incapacitated by an Army retiring board, on account of disability incident to the service, is by direction of the President retired from active service this date.

Capt. Henry P. Birmingham, Asst. Surgeon, is granted leave of absence for one month, to take effect upon the arrival at Ft. Trumbull, Conn., of Capt. George E. Bushnell, Asst. Surgeon.

Capt. George E. Bushnell, Asst. Surgeon, will proceed to Ft. Trumbull, Conn., and report for temporary duty during the absence on leave of Capt. H. P. Birmingham, Asst. Surgeon.

Major Washington Matthews, Surgeon, having been found incapacitated for active service by an Army retiring board, on account of disability incident to the service, is by direction of the President retired from active service this date, Sept. 26, 1895.

Capt. Thomas U. Raymond, Asst. Surgeon, is granted leave of absence for four months, to take effect about Nov. 5, 1895.

PROMOTION.

Capt. Louis W. Crampton, Asst. Surgeon, promoted to be Surgeon, with the rank of Major, Sept. 6, 1895.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending October 5, 1895.

Medical Director E. S. Bogert, detached from duty in charge of naval hospital at New York, November 1, and ordered to attendance on officers of the Navy in that city.

Medical Inspector T. N. Penrose, ordered to duty November 1 in charge of the naval hospital at New York, in addition to his present duties.

Surgeon R. C. Person's recent orders are so far modified that, when detached from the "Minnesota," he is ordered to special duty in connection with the improvements of the naval hospital at New York.

Surgeon L. G. Heneberger, ordered to duty in attendance on naval officers in New York.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended September 30, 1895.

Surgeon C. S. D. Fessenden, granted leave of absence for thirty days, Sept. 24, 1895.

Surgeon P. H. Bailhache, detailed to represent Service at meeting of American Public Health Association, Sept. 24, 1895.

Surgeon J. M. Gassaway, granted leave of absence for one day, Sept. 21, 1895, and for fifteen days, Sept. 23, 1895.

Surgeon H. R. Carter, granted leave of absence for one day, Sept. 24, 1895.

P. A. Surgeon S. D. Brooks, directed to proceed from Chicago, Ill., to St. Louis, Mo., for temporary duty, Sept. 16, 1895.

P. A. Surgeon L. L. Williams, relieved from temporary duty at South Atlantic Quarantine, and directed to rejoin station at Charleston, S. C., Sept. 19, 1895. Granted leave of absence for twelve days, Sept. 25, 1895.

P. A. Surgeon J. J. Kinyoun, detailed to represent Service at meeting of American Public Health Association, Sept. 24, 1895.

P. A. Surgeon J. B. Stoner, granted leave of absence for thirty days, Sept. 20, 1895.

P. A. Surgeon M. J. Rosenau, to proceed from Eagle Pass, Texas, to San Francisco Quarantine Station, for temporary duty, Sept 16, 1895.

Asst. Surgeon L. E. Cofer, granted leave of absence for thirty days, Sept. 23, 1895.

Asst. Surgeon J. A. Nydegger, to proceed from Savannah, Ga., to Mobile, Ala., for temporary duty, Sept. 16, 1895.

Asst. Surgeon J. H. Oakley, granted leave of absence for thirty days, Sept. 30, 1895.

LETTERS RECEIVED.

Anderson, G. K., New York, N. Y.; Allport, F., Minneapolis, Minn., (2); Ayres, S. C., Cincinnati, Ohio; Ashmead, A. S., New York, N. Y.; Atkinson, W. B., Philadelphia, Pa., (2).

Bovee, J. W., Washington, D. C.; Barrett, J. E., Wooster, Ohio; Bernd, Henry & Co., St. Louis, Mo.; Bell, Clark, New York, N. Y.; Boody, Geo., Independence, Iowa.

Carstens, J. H., Detroit, Mich.; Cox, R. P., Rome, Ga.; Collins, C. A., New York, N. Y.

Duncan, B. S., Columbus, Miss.; Davis, B. B., Omaha, Neb.; Doughty, W. H., Augusta, Ga.; Dixson, Z. A., Librarian, University of Chicago; Dewey, W. F., Petersburg, Va.

Eastman, Thos. B., Indianapolis, Ind.

Formaneck, F., Chicago, Ill.; Ferguson, H. W., Chicago, Ill.

Gallaher, Thos. J., Denver, Colo.; Graf, Will J., Cincinnati, Ohio; Givens, Jno. W., Baltimore, Md.; Garlington, T. R., Rome, Ga.; Gunn, Malcolm, Rush Medical College, Chicago, Ill.

Hagan, Hugh, Atlanta, Ga.; Hooper, E. D., Boston, Mass.; Haag, D. E., Toledo, Ohio; Howle, W. P., Oran, Mo.; Hild, F. H., Librarian, Chicago Public Library; Harmison, D. C., Bath, Ill.; Hawley, D. C., Burlington, Vt.; Hektoen, Ludwig, Rush Medical College, Chicago, Ill.

Jones, D. W., Rising City, Neb.; Jones, Joseph, New Orleans, La.

Kreider, Geo. N., Springfield, Ill.; Koenig, Adolph, Pittsburg, Pa.

Ludwig, Henry C., New York, N. Y.; Loving, Starling, Columbus, Ohio; Lea Brothers & Co., Philadelphia, Pa., (2).

Mann, E. C., New York, N. Y.; Mathis, A., Macon, Ga.; Mudd, H. H., St. Louis, Mo.; Mason, L. D., Brooklyn, N. Y.; Mason, R. O., New York, N. Y.; Martin, Wm., San Francisco, Cal.; Moore, K. P., Macon, Ga.; Montgomery, E. E., Philadelphia, Pa.; MacNeal, Arthur, Berwyn, Ill.

Ohlmacher, A. P., Chicago, Ill.

Parmele, Chas. Roome Co., New York, N. Y.; Pettyjohn, E. S., Alma, Mich.; Peterson, F., New York, N. Y.

Quimby, I. N., Jersey City, N. J.

Rogers, L. L., Kingston, Pa.; Richardson, C. H., Montezuma, Ga.; Ruzicka, V. & Sons, Baltimore, Md.; von Ruck, Karl, Asheville, N. C.

Spark, W. T., Rutledge, Ga.; Simonton, A. C., San Jose, Cal.; Smith, F. T., Chattanooga, Tenn.; Schoch, L. E., Reading, Pa.; Schimmel, M. S., Baltimore, Md.; Spencer, G. A., Haverhill, Mass.

Thompson, W. Gilman, New York, N. Y.

Vance, A. J., Harrison, Ark.

Wesley, A. A., Chicago, Ill.; Warner, W. R. & Co., Philadelphia, Pa.; Wing, Elbert, Chicago, Ill.; Wise, G. E., Librarian, Newberry Library, Chicago, Ill.; Wandless, Henry W., Dallas, Texas; Whinery, S., Cincinnati, Ohio.